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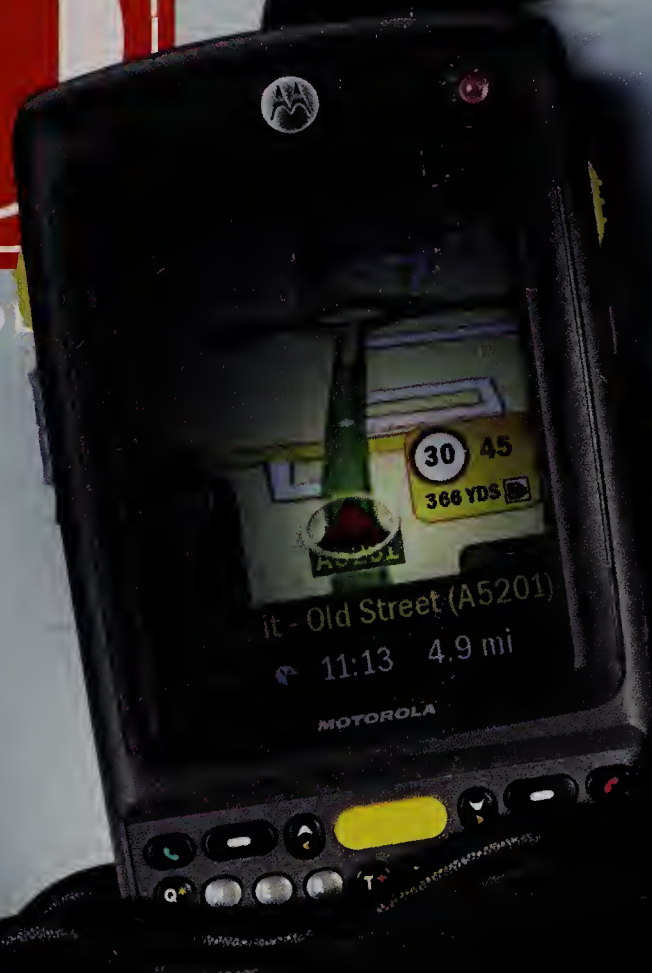
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Loomis's use
of wireless takes
some of the risk out
of moving money

BY KIM S. NASH

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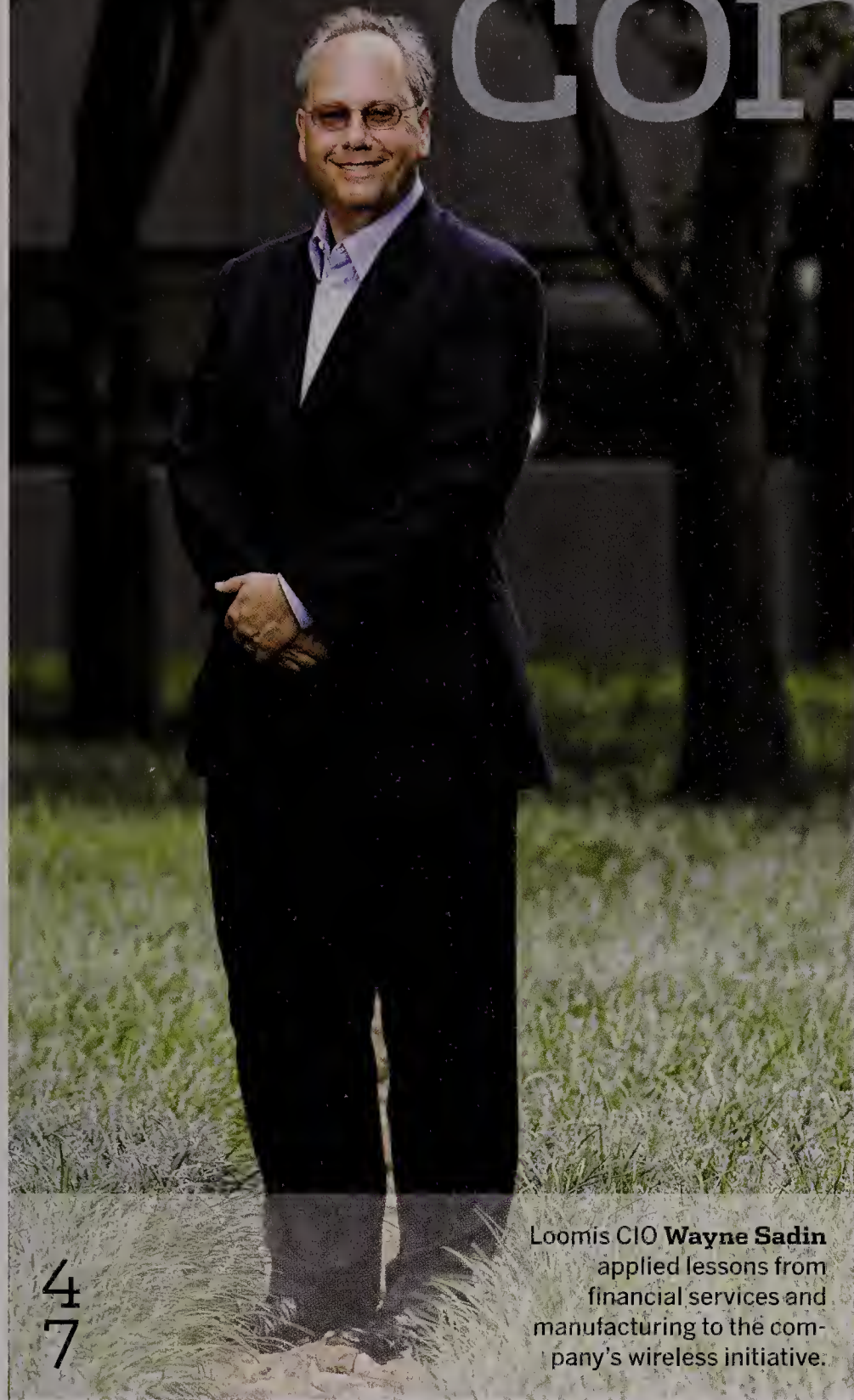
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THE TOP 10 CITIES FOR TECHNOLOGY CAREERS

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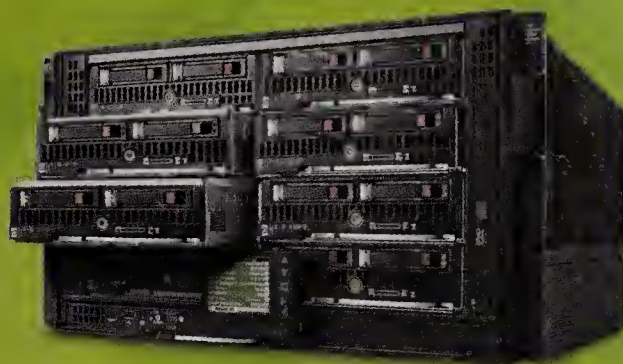
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The Plan

New ideas are all well and good. But do you have a plan?



This year's CIO 100 Symposium was exceptional. The speakers were smart, experienced and engaging, and they offered solid takeaways to the 250-plus IT executives filling the International Center at The Broadmoor in Colorado Springs. While they covered many topics, one theme in particular ran through the two days, sending a strong message about how to move the needle in your business and your life:

Do you have a plan? And are you fully committed to the change you're trying to effect?

Peter Darbee, CEO, president and chairman of the board of PG&E, introduced this theme as he related the story of his company's dramatic turnaround. "If you want change, you have to be thoroughly committed to it," he said. "The CEO needs to have a white-hot commitment to change."

PG&E had a lot to fix, emerging from bankruptcy in 2004 with a less-than-stellar reputation. But by providing a clear mission and set of goals, and reshaping the company culture around that, Darbee, CIO Pat Lawicki and PG&E's other executives have indeed moved the needle, increasing customer satisfaction, net earnings and shareholder value, and becoming an environmental leader (PG&E has contracts in place to get 24 percent of its energy from renewable sources).

Day one wrapped up with a presentation from Ina Kamenz, VP and CIO at Thermo Fisher Scientific. One year into a major change effort, Kamenz said she mentions her six-year plan at every opportunity inside the company. By sending the message that she's in it for the long haul, Kamenz hopes to keep her team as focused and committed as she is.

Best-selling author Christopher Gardner, whose book *The Pursuit of Happyness* was turned into a critically acclaimed film starring Will Smith, received a standing ovation for his inspiring talk about perseverance in the face of adversity. Asked if he was an optimist, Gardner answered that "optimism is fine, but more important than optimism is having a plan and being committed to it."

Finally, astronaut James Reilly recalled the philosophy of his first commander on the International Space Station, who would ask team members the following three questions: Do you have a plan? Is it working? And are you ahead or behind?"

What about you? Do you have a plan for achieving your professional or personal goals? What's your philosophy for getting things done? I'd love to hear about it.

Abbie Lundberg, Editor in Chief
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CXO Media Inc., 492 Old Connecticut Path,
P.O. Box 9208, Framingham, MA 01701-9208

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Let's Vent

Because sometimes you just have to let off steam



I love commercials and am not embarrassed to admit it. This isn't only because my livelihood depends on advertising—I truly enjoy seeing a well-produced commercial or ad. In fact, if the Philadelphia Eagles aren't in the Super Bowl (and they rarely are), I get more excited about the commercials than about the game.

The other day I saw a terrific ad. A husband and wife are together, and a friend calls asking the man to come over because he needs to "vent." His wife is so touched by this sentimental outreach that she lets him go. Unbeknownst to her, venting means sharing a Coors Light with his buddy using Coors's newly designed can.

Very funny, but it also got me thinking about the positions we hold and our inability to vent from time to time because of where we sit. We can't vent upwards because our peer executives don't want to hear it, and we can't vent to our team because that would be poor judgment and leadership. So who can we vent to?

Well, I am inviting you over to vent. Why don't I start:

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Airline security: Do *you* feel more secure?

Golf: Why can't we hit a stationary object straight?

Vendors and golf: Do they really think that a golf invitation is the only way to get our time or attention?

The economy: We can't control it, so let's just adjust to what it is giving us.

IT complexity: Vendors make a ton of money off it. Do you think they really want to give us something that isn't complex?

Apple's iPhone: Now it is *our* responsibility to support whatever the end user purchases?

Gen Y: Yes, you're smart, intelligent, driven and technologically astute, but could you wait three months before asking for your next promotion?

Tell your spouse you'll be home soon; we have more venting to do. Send me your best vent. The winner will get free admittance to our upcoming CIO Year Ahead Conference, Nov. 9-11, 2008 (www.cio.com/yearahead/info).

Michael Friedenber, President and CEO
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InBox

Defining the CIO

How would you describe the CIO role in three words? Our CEO, Michael Friedenberg, asked just that in his letter in our July 15 issue. The following is a collection of your responses. To read the rest and add your own, head to www.cio.com/article/432064.

If we can distill the CFO down to “writes the checks,” why can’t the CIO “manage the information?” Too simple?

Just as you wouldn’t let the CFO write checks to just anyone, managing the information also includes all the attributes underneath that are important to the business. The information has to be accessible (implying availability, security, etc.), it has to be easily consumable (rigid data architectures or arcane reports help no one), it has to be timely (lack of the right information about business trends is fatal) and it has to be affordable.

The real talent is in doing this well, and not letting the systems, the infrastructure, the data architecture, the business analytics or the development of products slow the business down.

MICHAEL HENRY

Choosing only three words to define the CIO role is definitely a challenge—especially when the span of the information officer is so wide. The CIO has their sights horizontally across the company to bring continuity, quality and system tools to build a strong operational foundation for technology users. They also have their sights vertically in the business units looking at integration, value proposition and productivity tools. This is a tough balancing act and definitely requires leadership, techni-

cal and business knowledge.

I think if we take the same exercise to a CFO or COO, they definitely would not come up with “writes the checks” or “trains on time.” Their role also consists of leadership and business knowledge, accompanied by their advanced skill set that puts them in the Chief role. Their response might be similar to “business financial leader” or “business operations leader.”

“Business technology leader” is my first choice in describing the CIO role, followed by “resourceful, resilient and reliable.” Both accurately describe how I lead IT initiatives for my company.

DAVID STANTON

IT Director
National Strategies Inc.

If we try to describe a CIO too broadly then I would fear the CIO would become either inefficient, or worse, redundant. For example, couldn’t the COO or CFO say that they are the business enablers, since without them business wouldn’t get done?

What I like about “business process enabler” is that it focuses on what most CIOs are very good at—improving processes. Networks, firewalls, systems, enterprise applications, VoIP, SAN, UC, CRM, DBs, SDLC, Agile are all processes improved to the point of

appliances, methodologies, architectures and tools. And CIOs do this better than just about anyone else in the enterprise because we think “strategic-to-tactical” and we look at everything, from the manufacturing shop floor to the boardroom. We understand how to take “wet-ware”—ideas, brainpower, skills, training—and turn that into tools like software and hardware.

As one CEO noted, “You bring our blue-sky ideas down to earth and make them real.”

MARK CUMMUTA

CIO.com blogger

This is a very interesting challenge, to define the CIO in three words. Here are some three-word definitions that come to mind based on my eight years in CIO roles: Bridges the Gap (between business and IT), Wears Both Hats (can speak the language of both business and IT), Under the Gun, Deliver or Die, Solver of Problems, Needs Thick Skin, Leads by Example (naturally this applies to all CXO positions), Drives Change Now (our businesses can’t wait), Anticipates Business Needs (at least that’s what we need to try to do). I could keep going but I’ll stop. I definitely like your three words, Business Technology Leadership.

PAUL I. AYOUB

SVP & CIO
Employers Holdings Inc.

I think the definition will depend on the state of evolution (startup, midsize, mature) of your business, as well as the current working relationship between IT and the business. It might be healthy to pass a multiple-choice questionnaire around senior operational execs and ask them which best describes the CIO role.

Continued on Page 15

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InBox

Continued from Page 12

My three-word suggestions, and how I interpret the responses follow: Where's My E-Mail?—you're perceived as an infrastructure provider; Smoke and Mirrors—the value-add of IT is impenetrable to your colleagues; Next Big Thing—you may be visionary and forward looking but overhyped; A Necessary Evil—people appreciate the criticality of the function but resent cost and control mechanisms; Key Business Enabler—you're in the zone and effectively supporting business goals; My Trusted Friend—you've

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achieved business intimacy; now things can only get worse!

CHRIS CORNER

VP, Business Solutions
Exide Technologies

I found your question very interesting, especially since it looks like the role of the CIO morphs into something else every so often. Maybe a good experiment would be to ask the same question in three years and see how the answers change. Probably if you asked a roomful of CFOs, CEOs, COOs, etc., to describe their role in three words, they would come up with at least the same embarrassed silence and variety of answers as you got from the CIOs. Things always look easier—or at least less complex—from the outside.

I believe that my coworkers (including some of the CXO!) would probably agree in defining me as "The person who makes things work," but I'd find the definition rather reductive. How would I describe the role of the CIO?: Understand the Business, Lead the Technology Strategy, Deliver Everything You Promise.

CATERINA LUPPI

IT Director, FASEB
www.faseb.org

I have lived by the following tenet, "The task at hand is simply solving business problems with information technology." My descriptor would be "Solves Business Problems."

GEORGE J. ABBOTT

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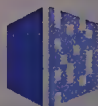
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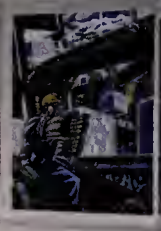


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trendlines

EDITED BY STEFF GELSTON

NEW * HOT * UNEXPECTED

A Data Center-in-a-Box

INFRASTRUCTURE Hewlett-Packard has become the latest vendor to announce a “mini-data center” housed in a shipping container, which can provide a way for companies to add compute capacity when power and cooling systems in their existing data centers are maxed out.

HP's Performance-Optimized Data center, or POD, will be available in the U.S. by the end of the third quarter and worldwide a few months after that, the company said last month. Sun Microsystems, Rackable Systems and IBM also sell similar products.

It sounds like a gimmick, but proponents say the portable data centers can solve real problems. They are customized 20-foot or 40-foot shipping containers that vendors fill with servers and storage gear before shipping them out. Customers plug in a cooling supply, a power supply and a network connection, and the mini-data centers are ready to use.

The containers provide a way for resource-constrained facilities to add compute power without having to build a new data center, which is expensive and takes a year or more. They can also be used for disaster recovery, by setting one up on the grounds of a satellite office, for example.

Continued on Page 18



Enterprise Web 2.0 Adoption Still GROWING

COLLABORATION While many companies have embraced Web 2.0 technologies during the past year, a recent McKinsey survey finds that barriers to enterprise adoption still remain.

Adoption of tools such as blogs, wikis, social networks and mash-ups has risen since 2007, the first year the survey was conducted, with companies on average adding three Web 2.0 tools to their technology portfolio.

For instance, 34 percent of companies surveyed say they are adopting blogs, compared with 21 percent a year ago. Really Simple Syndication (RSS) implementation—which allows users to subscribe to information that's relevant to them and have it pushed to an RSS reader or their e-mail—jumped to 33 percent from 24 percent last year. Wiki adoption rose from 24 percent in 2007 to 32 percent in 2008.

Companies are also putting these tools to a higher-value use than in the past, according to the survey of

1,988 executives at enterprises around the world. And companies have adopted many to tackle the problem of knowledge management, the process of storing and sharing information within organizations. A staggering 83 percent of respondents who added Web 2.0 technologies for internal use said that they did it to “manage knowledge.” Another 78 percent said they used Web 2.0 to “foster collaboration” and 74 percent to enhance company culture.

But the outlook for increased Web 2.0 adoption has begun to hit some barriers, according to McKinsey. The biggest issues cited by survey respondents? Management's inability to grasp the potential financial returns from Web 2.0 (28 percent), unresponsive corporate cultures (22 percent), lack of incentives to experiment with such tools (20 percent) and less-than-enthusiastic leadership (15 percent).

—C.G. Lynch

India Becoming a Major R&D Outpost

OFFSHORING Research and development work sent by multinational companies to their own centers in India or to that nation's service providers is expected to grow to be a \$21.4 billion industry by 2012, according to a study by management consultancy Zinnov.

Offshoring R&D to India is currently a \$9.35 billion industry, with R&D centers owned by multinational companies accounting for about \$5.83 billion of this market, according to Zinnov. The centers work on software products, embedded systems and engineering services.

When multinational companies started setting up centers in India about 10 years ago, Indian engineers worked mostly on ancillary services like testing and porting. Over the last eight years, staff have matured, built domain expertise, had extensive interactions with customers and can now design new products, says Vamsee Tirukkala, cofounder and managing principal of Zinnov.

Multinational corporations continue to establish offshore R&D centers in India driven both by an increase in the available talent pool and cost savings, according to the study. The number of centers rose from 180 in 2000 to nearly 600 this year. Although the cost of engineers jumped fivefold in India over the last 15 years, it is still about one-third to half of the cost in the U.S. or Europe, according to Tirukkala.

The strongest competition to India as an offshore R&D location will come from China, according to Tirukkala. However, in China there are still concerns about the protection of intellectual property, the talent pool is smaller and far fewer people speak English than in India, he added.

—John Ribeiro

Data Center

Continued from Page 17

And powerful rack-mount servers, which generate a lot of heat, can be packed more densely in a container because the temperature can be managed more closely in the closed environment.

The HP POD will accommodate 1,800 watts per square foot, compared with about 250 watts per square foot in a normal data center, said Steve Cumings, director of infrastructure with HP's Scalable Computing and Infrastructure group. HP's 40-foot POD will contain 22 50U server racks and be able to house up to 1,100 1U servers or 12,000 large form-factor hard drives, for a total 12 petabytes of storage, Cumings said. (Server racks vary in height; *U* is the designated standard unit of measure for server-rack height, equal to 1.75 inches.) Customers will be able to put other vendors' equipment in the POD, and HP will install and configure the third-party gear alongside its own.

Sales this year will be "very low," Cumings acknowledged, but demand is expected to increase next year. "These are a great solution for some things, but they are a complement to traditional data centers. It's not that we expect everyone to suddenly flip over to using containers," Cumings said.

HP hasn't announced pricing. Container products from other vendors start from a few hundred thousand dollars and can run into the millions.

The container concept is still new, and critics see potential flaws. Some worry about security, although vendors say the boxes are hard to break into and can be housed on private lots. Others worry about the reliability of having a single power or network connection for such a dense load of equipment. There are also mundane issues, like not being able to open a container to service it in heavy rain, unless it's covered up.

—James Niccolai

The Next Killer App?

SEARCH Almost half of all Internet users now use search engines on a typical day, up from one-third of users in 2002. E-mail remains the most popular online activity—for now.

Daily Internet Activities

E-mail	
Online search	
Check news	
Check weather	
Research hobby	
Surf Web for fun	
Visit social networking site	

Daily Internet Users

60%
49%
39%



SOURCE: Pew Internet & American Life Project



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with our existing systems?

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BROCADE

Learn All You Can About a Job **BEFORE** Taking It

CAREER A little knowledge can go a long way in making a new job a successful one, say hiring specialists. So if you have the chance to talk to someone at a company where you're applying for a job before your interview, find out as much as you can about the role.

Sam Gordon, who leads the CIO practice at Harvey Nash Executive Search, and Phil Rosenberg, founder and president of career coaching firm reCareered, suggest several questions to help you learn more about the position you're interested in.

If a job ad emphasizes a particular software implementation, Gordon recommends asking: What stage is the project in? Who is the project sponsor? How have previous projects gone? The answers will give you a sense of whether the company's had trouble with projects in the past and whether the current one is going smoothly.

He also suggests asking what a new hire must achieve in the first six months and the first year on the job. "You can get a very good sense of the initial priorities for the role," he says. If you sense the role may be more tactical than strategic, ask how much time the new hire should spend on IT strategy versus operational technology initiatives.

And don't forget to cover the basics. Rosenberg suggests asking to whom the position reports, department and budget size, the structure of the department, the amount of travel, and, of course, why the company is hiring. (For more career advice, read "How to Ace an Executive-Level Job Interview" at www.cio.com/article/195051.)

—Meridith Levinson



E-Mail from Angelina? Just Hit **Delete**

SPAM No one will deny the global celebrity of Angelina Jolie. She's on the cover of magazines, stars in blockbuster movies and is a ratings bonanza each time she appears on TV.

The spammer community loves her, too: On average, about 2.28 percent of the total global daily e-mail volume contains subjects like "Angelina Jolie nude movie" and "Angelina Jolie naked video," according to Secure Computing's TrustedSource.org spam report.

"Angelina Jolie, for example, is unknowingly luring many to eagerly install Trojans onto their PCs," notes the report. The actress is an example of how spammers are using pop culture and current events such as the U.S. presidential election to lure normally cautious end users into opening up messages or links that download malware.

While Jolie is the number-one celebrity spammer, who's next on the list?

Barack Obama. The Democratic nominee's name is "making the rounds globally," notes the report, even taking the lead against the "enticing lure" of...

Paris Hilton. The hotel heiress, wannabe actress and fledgling singer is no stranger to the power and problems of celebrity life in the Internet age. Just to spice things up, she and John "What's a Computer?" McCain engaged in a recent war of words.

Britney Spears. "Is it that crazy to think Britney actually did send me this e-mail?" Well, not as crazy as when she shaved her head, but close.

Hillary Clinton. It probably doesn't make the New York senator too happy that she finished behind Obama. Again. Must be a right-wing conspiracy.

The report also noted that the volume of spam jumped 280 percent in the second quarter of 2008 versus the period a year ago. And the U.S. continues to send twice as much spam (16.6 percent) as number-two-ranked Russia (6.7 percent).

—Thomas Wailgum



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Addressing Telework Security

SECURITY Companies that allow employees to telecommute need to pay better attention to the cybersecurity challenges associated with it, according to a study by the Center for Democracy and Technology (CDT), an advocacy group focused on privacy and security, and Ernst & Young.

CDT and Ernst & Young declined to call telecommuting more risky than working in an office but said it presents different risks. In many cases, telecommuters use their own computers, subjecting company

information to data breaches, and many companies don't have comprehensive telecommuting policies or restrict telecommuters from accessing data they don't need for their jobs, the study said.

"There's a lot of factors that go into making up the potential risk," says Ari Schwartz, vice president at CDT. "In some instances—if you're talking about very sensitive information, if you're talking about someone who's always working from home with very little monitoring—there's going to be a greater risk than someone who brings home information every once in a while and is monitored a lot."

Companies need to weigh the risks and take steps to minimize the

possibility of lost data, he said. With telecommuting likely to grow in coming years, Schwartz says, "We have an opportunity, before it grows to be very large, to define best practices."

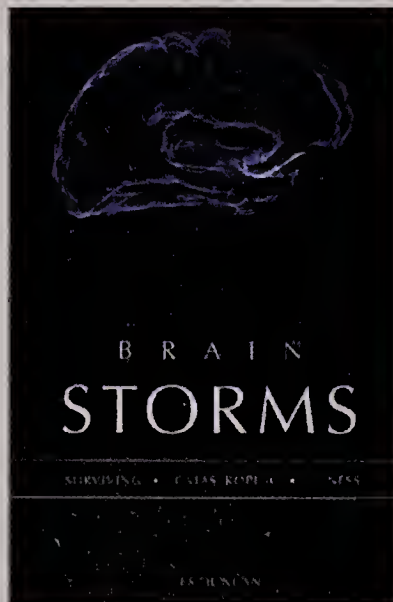
The study surveyed 73 U.S., Canadian and European companies and found that less than half provided teleworkers with e-mail encryption software. Only half of respondents offered hard-token authentication for work devices, and there was little use of biometric authentication. About 20 percent of respondents said their organizations periodically inspect offsite work locations, and fewer than 50 percent use security cables to lock down computers at home offices.

—Grant Gross

Leadership Lessons Help CIO Beat Illness

INSPIRATION After battling back from four brain hemorrhages and two surgeries, former corporate VP and CIO of Atmos Energy Les Duncan decided it was time to put his positive thoughts about healing on paper. "I'm a walking miracle," says Duncan, who was diagnosed with cavernous angioma, a cluster of abnormal blood vessels found in the brain and other parts of the body.

Writing his first book, *Brain Storms: Surviving Catastrophic Illness* (Tate Publishing & Enterprises), not only helped Duncan through his own illness and recovery, it has helped others since its



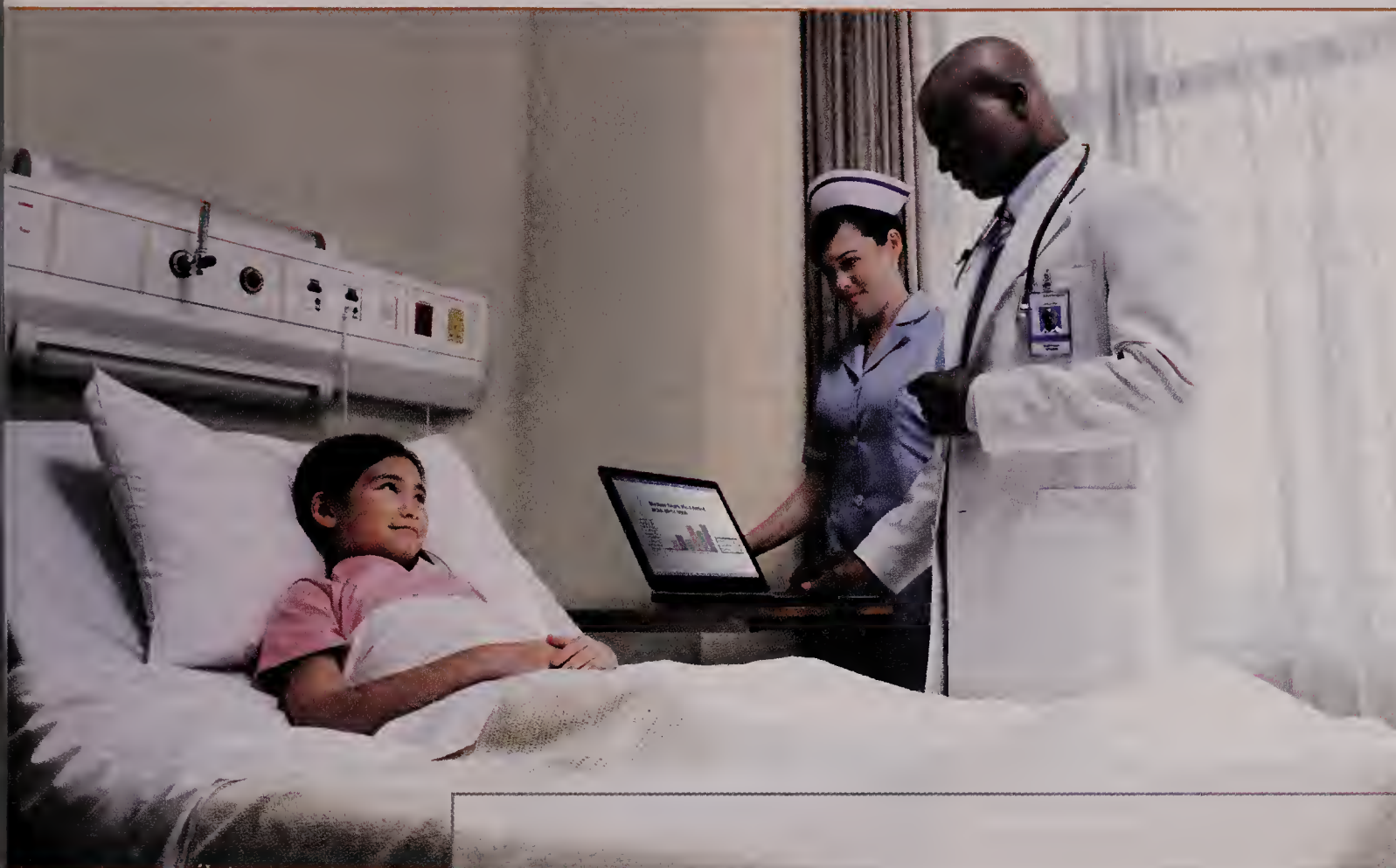
publication in April. "I get e-mails from people thanking me for helping them through their battle," he says.

During his 2006 recovery, Duncan sat at his computer typing out what he had learned about the healing process. The most important lesson: Have a good attitude. "I never allowed myself to believe I wasn't going to recover," he says. Duncan's leadership experience helped him keep cool during crises, maintain communications with those helping him heal and prepare for a slow and steady recovery. These skills, he says, were relevant in the

C suite—and in his recuperation.

Duncan is now retired and on disability from Atmos Energy, which under his IT leadership was a three-time CIO 100 winner in 2003, 2005 and 2006. He misses his CIO role but is using his leadership abilities to help others cope with this disease. Duncan provides peer support and writes newsletter articles for the Angioma Alliance, a nonprofit organization. "I've been doing different things all my life, and this is no exception," he says of his current activities. "It's just another stage."

—Jarina D'Auria



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The Wisdom of Clouds

A hot technology must weather stability, security and support issues to win over large enterprises

Cloud computing is an emerging technology with a whole lot of buzz. But defining it is as hard as pinning down a cloud. Depending on who you talk to, it is described variously as a form of software as a service, platform as a service or utility computing.

What is clear is that we're in the early adopter phase, according to Forrester Research's report, "Is Cloud Computing Ready for the Enterprise?" Forrester offers this definition of the cloud: "a pool of abstracted, highly scalable and managed computer infrastructure capable of hosting end-customer applications and billed by consumption." No matter how it's defined, the cloud has obstacles to overcome before it's ready for enterprise use, writes Forrester Research principal analyst James Staten. So while potential benefits include lower costs, companies are testing the waters only with noncritical projects.

Stability and security are two obstacles to enterprise adoption. While there are few well-known vendors (Salesforce.com, Amazon and Google) offering some variation on clouds, SLAs are rare. And, since cloud computing within organizations often takes place outside IT, vendors cannot always provide references to potential clients.

Transparency is one of the security issues surrounding cloud use. Some vendors will not disclose where an application is located geographically, and they don't allow clients to request a location.

Lack of support is another problem. Since clouds are unique infrastructures, many commercial operating systems are not certified on these platforms. Staten notes that because the infrastructure is virtualized, this creates licensing issues.

However, CIOs shouldn't try to stop business users from experimenting with clouds, he says. Instead, they should get to know the options and then endorse the clouds that fit their organization's processes and strategy. "You don't have to host or provide all of the technology choices yourself," says Staten. "Instead endorse the choices that bring better solutions to the business."

Best Practices

1 Get to know the cloud.

Staten says trying to stop your users from experimenting with clouds will only push their use further under the covers. Instead, look at what they are doing and learn from it. Consider which applications are potential candidates for the cloud.

2 **Talk with vendors.** Once you've tested the waters and shopped around the different offerings, let vendors know what they need to provide to meet your needs. They are looking for your guidance.

3 **Insist on transparency.** Gain an understanding of security and continuity management issues by requesting detailed information from vendors, suggests a recent Gartner report on security and cloud computing.

Still Getting Off the Ground With Enterprise IT

Clouds Are a Growing Technology...

Market for cloud computing:

**\$160 Billion
by 2011**

**...But Few Enterprises Are
Using Clouds Today**

Large companies using the cloud:

5%-15%

SOURCES: Merrill Lynch, Forrester

CEO₂CIO

Today's IT Leaders on Market Trends

THE RELATIONSHIP BETWEEN EFFICIENCY AND AGILITY

THE STAKES ARE HIGH FOR CIOs.

The pressure is on to "strategically align IT resources and activities with value-add projects and tasks," according to one IT leader.

Another says it's more critical than ever to "act in concert to support the revenue-generating projects and services that we provide and/or enable."

And one business executive sums it up by saying IT needs to do a better job to "address the future requirements of the business, [and] not just maintain the systems of the past and historical business models."

The Reason

Almost all business processes and valuable customer interactions live in the digital realm. With so much of the business's value being invested in the IT infrastructure, CIOs are continually challenged to support new services and modify existing ones in order to meet fast-changing requirements—all without increasing cost, reducing quality or introducing risk. Now add to that the fundamental shift in the business's expectation for IT to speak the business's language.

These dynamics make it imperative for CIOs to embrace the new outlook for IT to play a critical role in the business. To do so, IT and the business executives must be able to communicate on the same level and have an agreed-upon understanding of priorities based on the business's needs. Additionally, IT must be able to report back to the lines of business on the value it delivers to each group.

The Answer

That is a tall order. But it can be done, and there are strategies in place, with software at the forefront, to drive this evolution in IT. Business service management (BSM) is a phased approach to supporting, assuring and automating services from the perspective of the business,

and CIOs who embrace it will bring to their resource-intensive—and people-intensive—operations new levels of speed and efficiency.

BSM is deemed by Forrester Research to lower operational costs by as much as 33 percent in companies where it is fully implemented. These organizations are then able to leverage IT resources to:

- Invest in new technologies that deliver a higher level of service
- Launch new revenue-generating projects
- Help the company

take new products to market sooner

Why Now?

The measured adoption of BSM can help resolve some of the tensions that exist between how IT views itself and how it is viewed by the business—tensions that can jeopardize IT's ability to perform at the speed of business.

For example, the common mode of operation for many IT organizations is to try to satisfy every demand and resolve every issue as it occurs, regardless of its



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relationship to business priorities. This leads to IT and the business having dramatically different impressions of the technology organization's effectiveness.

IDG Research Services recently surveyed 100 business and 100 IT executives worldwide about how effective they considered IT to be:

- Seventy-three percent of IT executives considered IT to be extremely or very effective in executing projects that support key growth opportunities, versus just 55 percent of business executives.
- Seventy-one percent and 74 percent of IT executives considered themselves to be very or extremely effective, respectively, at managing IT based on business priorities and responding to changing business needs or new conditions. Just 58 and 48 percent of business executives, respectively, hold the same opinions.

How BSM Helps

In providing a unified, integrated approach for managing IT assets, processes and functions across the enterprise, BSM optimizes the quality of IT support for the most-business-critical services. With a BSM solution that enables process and data integration around shared views of business services and their components, IT can identify and quickly fix problems, giving priority to those that have the greatest impact on key business operations.

BSM enables the automation of manual tasks, accelerating the speed at which IT can deliver services, from provisioning to patching. It also alleviates one of the chief obstacles in supporting business needs and requirements—the staff/skill shortage. BSM can free up staff members' time and enable them to focus on higher-value-added tasks, such as bringing new end-customer services to market.

BSM's standardization of IT processes to deliver and provision IT services also improves compliance. And the enhanced control and governance of key IT processes, including incident management, change management and event management, which BSM enables, should result in:

- Improved quality of service
- Reduced expenses to deliver and support services
- Faster delivery and modification of services

Key Criteria for a BSM Solution

The degree of success an organization has in adopting a BSM approach hangs in part upon the solution it chooses

for implementing it—and most importantly, upon how that solution is architected.

- The right architecture must connect disparate IT management tools through common processes and business service views. Enabling information sharing and centralized management across systems helps IT rapidly automate processes and work flows. A BSM solution based on an extensible, open architecture minimizes what could otherwise be a costly and intensive systems integration project.
- The ideal approach should also give customers a very modular way to implement BSM. Modular yet integrated solutions let organizations take a phased approach to BSM that allows new components to be built atop the same shared architecture and work seamlessly with components that have already been installed.

BSM Measures of Success

In companies where BSM has been more widely adopted, there is increased confidence in the ability to capitalize on growth opportunities where IT investments are required.

BSM is already being implemented or is in the process of being implemented in 64 percent of companies overseas, versus 18 percent stateside. Seventy-three percent of non-U.S. respondents, compared to 47 percent of U.S. business and IT executives, report extremely or very high confidence levels in the ability to capitalize on IT-dependent growth opportunities.

The fact that respondents outside the United States are more likely to indicate they are extremely or very confident in the ability to capitalize on these opportunities is a testament to the process rigor and improved service support that BSM enables.

Even if BSM were merely a route to help IT departments gain efficiencies by containing costs, it would be attractive. But BSM promises much more. It also promotes IT and business alignment by managing IT from the perspective of the business—and opens the door for IT to drive innovation and increase revenue growth.

Go to www.bmc.com/ceo2cio to obtain a download of the complete white paper "The Relationship Between Efficiency and Agility." Based on a major research survey by IDG Research Services, this paper draws on peer insights to help executives reap the benefits of BSM strategies.

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BY **FRED O'CONNOR**

IT Security Manager

job description: An IT security manager handles all aspects of IT security, creating and implementing corporate IT security practices and ensuring that employees follow those procedures. This position consists of securing Wi-Fi networks, handling off-site storage of backup tapes, establishing policies for lost laptops and much more. "It was a tough job and it's gotten tougher," says Andy Zaleta, partner and coleader of the technology practice in the Americas for executive search firm Battalia Winston International. "It has gotten down to being a huge job."

cies to employees and the possibility of board presentations on overall security preparedness.

elimination

round: Candidates must be able to describe their current security system and how it is being upgraded. Some may be reluctant to share this. However, the question needs to be addressed to see if the person understands security risks.

why you need

one: Businesses need a position dedicated to keeping sensitive and important data private. Recent publicized incidents of system hacks, stolen computers and missing CDs, all containing confidential records, demonstrate the need for this job. The vast amount of information corporate IT systems hold requires protection. "Security is just an overall important issue, period," says Zaleta.

desired skills:

Five to seven years of IT security experience. Look for candidates with Certified Information Systems Security Professional qualifications. Zaleta sees businesses emphasizing college degrees less for this position. Some are content with an associate degree or military experience; others want workers with a four-year degree.

where to look:

Try the security divisions of large technology companies (Microsoft, IBM) as well as security companies (McAfee, Symantec). Federal intelligence agencies may also prove fertile recruiting ground. The RSA Security conferences, held in the U.S., Japan and Europe, can provide a chance to

network with those interested in IT security.

what to look for:

IT security managers need to be aware of internal security threats (employee access to restricted documents), external threats (wireless router hacks), and ad hoc issues (leaving a laptop on a plane). They also must know countermeasures against those risks. Possible hires should be able to express their commitment to security programs, have experience with budgets and know their IT systems in detail. They should also understand that most fraudsters look to exploit the minute weaknesses no one considers. Communication skills are crucial given the need to convey security poli-

growing your

own: An IT security training program is key to creating a successful in-house candidate, said Zaleta. This program should be coordinated with outside institutions that handle CISSP certifications. Senior management needs to commit to the training. Getting this support can prove challenging because training programs usually get chopped from the budget during spending cuts, Zaleta said. However, only with adequate training does one become fully versed in security issues.

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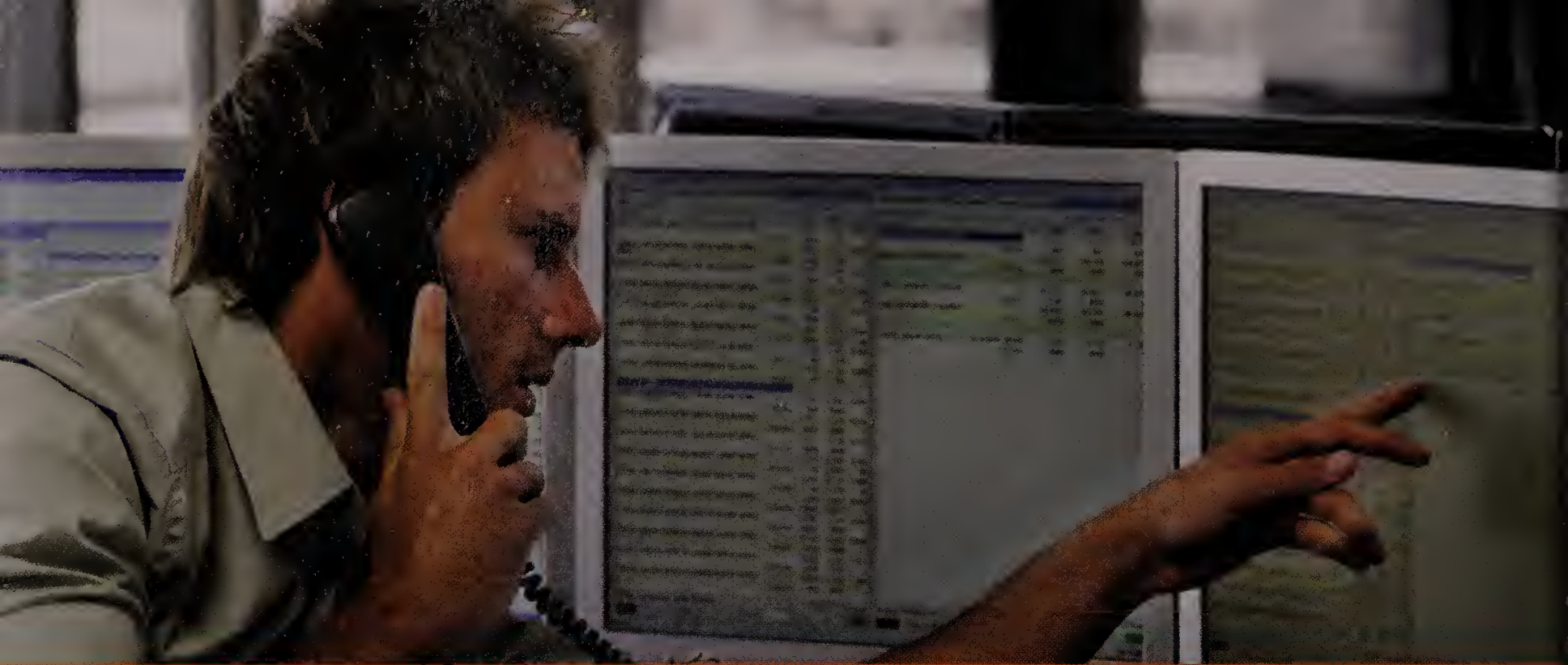
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ESSENTIAL technology

FROM INCEPTION TO IMPLEMENTATION—I.T. THAT MATTERS

Edited by **Steff Gelston**
sgelston@cxo.com



Employee provisioning of laptops and PDAs is the next logical step in the consumerization of IT. But figuring out the right parameters can be tricky.

BYO...Laptop?

BY STEPHANIE OVERBY

HARDWARE | A few years back, when Leslie Fiering began talking to IT executives about the potential benefits of employee-owned notebooks in the enterprise, the idea caused “fear, loathing and extreme distress in the hearts of CIOs,” she recalls.

But over the past two years, Fiering, a research vice president for Gartner, has seen the idea pick up steam as an increased number of IT organizations test out employee-provisioned and owned hardware programs, “sometimes by choice, but often by necessity.”

“Employee-owned notebook programs are gaining popularity and are already run by more than 10 percent of organizations,” says Brian Gammage, Gartner vice president and fellow.

It’s the next logical step in the consumerization of IT, say analysts. When people see the new notebook they really want become affordable—and the company has put off that system refresh yet another year—they’re going to get it and find a way to bring it into work. “We get calls from CIOs all the time saying, ‘Help, one of my executives got a MacBook Air. What am I going to do?’”

A program for employee provisioning is one way to gain some control over these issues. It can lead to greater user satisfaction and reduce total ownership costs anywhere from 9 percent to 44 percent, says Gartner. But figuring out the right parameters for a

successful employee-owned laptop program can be tricky.

Testing the Waters

At Sunoco, IT leaders were eager "to evaluate the risks and benefits of consumerization in the laptop computer arena," says Mark Quarles, manager of infrastructure services for the \$36 billion energy company. "Specifically, what are the total cost of ownership and manageability impacts of this potential paradigm shift?" Although the company didn't expect material savings on the hardware, the hope was that ongoing support costs could be reduced.

The infrastructure services group had always provisioned and supported all hardware for the company's 14,000 employees. So its IT leaders had real concerns about its impacts or risks on the reliability and security in moving to an employee-owned model. But in May, Sunoco took some baby steps toward

tion guidelines, including requirements for Microsoft Vista Business, OSX or Linux distribution, video and USB ports, 100GB hard drive, 2GB of RAM, and LAN connectivity. The program also required that laptops be configured for antivirus software, Microsoft Office 2007 (excluding the Linux laptops), Citrix ICA Client, Windows Update and VPN.

The Sunoco pilot made it the users' responsibility to acquire, configure and maintain their laptop without IS staff support. Participants documented the processes they followed to configure their laptop as well as the specific applications and access modes (connected to the corporate network or not) they used to do their work, and the end result of their experience with this test.

Results were mixed. "Some participants—around two-thirds—decided they were spending too much time managing their own desktop," says Quarles.

"Even if you had a complete transition to this model, staff will, at the end of the day, expect that they can turn to internal resources to resolve their [IT] issues."

—Mark Quarles, manager of infrastructure services, Sunoco

examining the pros and cons of putting that purchasing power in the hands of its users.

Sunoco's proof of concept for an employee-provisioning program involved six workers over three months. The infrastructure group told them they could purchase any laptop they liked with a company stipend of \$1,400.

A reasonable stipend is a critical aspect of any employee-provisioning program, says Fiering, because it is the only way to ensure that the user will provide a notebook that meets the enterprise performance and security requirements. And Sunoco had more than a few. It issued minimum worksta-

Some were unable to resolve certain issues, like the lack of a full Microsoft Exchange client for Linux systems. Others were completely satisfied.

The employee-owned laptop model increased complexity for users but didn't reduce total cost of ownership for Sunoco, Quarles says. Ultimately, the infrastructure services group determined there was not a business case for the employee-ownership model, at least not as Sunoco initially envisioned it.

"It was clear that we would be unable to eliminate the entire desktop-support environment," Quarles says. "Even if you had a complete transition to this model, staff will, at the end of the day,

16 percent of companies already run an employee-owned notebook program but serve only 2 percent of their users.

SOURCE: Gartner

expect that they can turn to internal resources to resolve their [IT] issues."

Leaders at Sunoco remain open to employee provisioning in the future. "As technologies change the potential issues change or disappear," says Quarles. "If, over time, the majority of applications can present themselves through a standard Web browser, then you have eliminated the need to install any software on the end-user platform, which should greatly reduce the need for support."

A Quiet Revolution

Fiering notes that numerous unsanctioned, employee-owned notebooks and desktop PCs are accessing enterprise networks. Recent published surveys have shown the number is considerably higher than anyone, let alone IT, ever imagined. A Gartner user survey found that 30 percent of workers brought unsanctioned devices to the office. So CIOs should at least explore official bring-your-own laptop programs.

IT leaders are reluctant to publicize these efforts. "A lot of them are unsure about it and unsure of the backlash they may face from auditors and others," says Fiering. Some of the uncertainty is unfounded; IT organizations have dealt

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Employee provisioning can lead to greater user satisfaction and reduce total ownership costs. —Gartner

with similar issues in giving nonenterprise devices from contractors or partners secure access to their networks. One IT leader at a Fortune 500 company says he cannot talk openly about his forays into employee-provisioned hardware but notes that “when it comes to buying a commodity item, a motivated consumer will invariably get a better deal than an enterprise.”

“It’s still early days,” says Fiering. Self-provisioning tends to work well in small-company environments.

Kearns & West is a public relations and dispute resolution consulting firm with 35 employees and a principal who also oversees information technology. It started a buy-your-own hardware program five years ago, although leaders admit it took a leap of faith to move away from the company-owned model. “We decide to get rid of our depressing laptop graveyard,” says Sharif Ebrahim, a Kearns & West principal. “The program is a success because it lets everyone pick the packages and bundles that best suit their work. The road warriors go with the light laptops, the graphic designers go with the Macs.”

Instead of one IT director making decisions, “50 percent of which are likely to be wrong,” says Ebrahim, the firm’s employees now have newer hardware and software than they would receive by waiting for the next refresh. Kearns & West maintains a few corporate-owned laptops that employees can check out as necessary.

Ultimately, the trend will continue to pick up steam, says Fiering, but it won’t

happen overnight. “There are tools for PC virtualization that will allow companies to reach out to noncompany-owned devices with full security. That market is still maturing,” she says. “And frankly, IT organizations need to do more work on the back end with their own networks, policies and decisions about what kinds of users to involve, what kind of equipment they need to buy.” And that will take time.

The Future of Provisioning

Still, employee provisioning of laptops is not for every company. “It can open up large companies to a whole host of issues that keep CIOs up at night,” says Fiering. “I don’t think it will ever be universal. You’re going to have high-security or military-type situations where it just doesn’t make sense.”

Employee provisioning isn’t likely to go away. In fact, cell phones are already the latest IT-sanctioned bring-your-own program. User-owned smartphones and PDAs are often tolerated because they are small and easier to turn a blind eye to, say Fiering and Gammage. But employees use them to access and store company data, so CIOs should consider putting policies in place around such mobile devices.

Motorola says it has deployed a successful mobile self-provisioning process used globally. Employees have provisioned more than 14,000 smartphones in 33 countries, saving the company an estimated \$400,000 in annual support costs and eliminating long wait times for employees eager to sync their new device with corporate e-mail. **CIO**

Power to the Users

For more on the CONSUMERIZATION OF I.T., go to www.cio.com/article/28821.

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Making a Success of Succession Planning

By developing others, you are developing your organization—and yourself

W

hen Mel Karmazin resigned his position as COO and president of Viacom in 2004, he ended what *The Wall Street Journal* labeled as “four years of constant tension and sniping.” Even though Karmazin was the expected successor to Sumner Redstone, the founder and CEO of Viacom, it was an open secret that he and Redstone didn’t see eye to eye. Karmazin’s leaving didn’t ameliorate the tension, however; it has created another succession nightmare. Even now, four years later, a successor to Redstone has yet to be anointed.

Failure to name a clear successor seeps below the top floor. Bob Nardelli, former CEO of The Home Depot and once a successor in running to Jack Welch at General Electric, told a reporter for *The Wall Street Journal* that the competition for the top spot was like “playing in the Super Bowl, the last two minutes, for two years.... You know you’re being looked at through a magnifying glass.”

Succession Blues

Well, if it’s tough on the leader, it is also stressful for the folks underneath; they get drawn into rival camps. Instead of being able to focus on the work,

subordinates are often asked, whether they like it or not, to choose sides between one heir apparent or another. Worse, those in the running for higher positions may ask their teams to withhold information or refuse work assignments from a rival’s teams. It makes for lousy work conditions and detracts from productivity, to say the least.

Competition among individuals and teams over ideas is positive and even healthy for the organization because it can stimulate people to think differently in the pursuit of good solutions. But when competition among rivals turns destructive, it causes friction with heat so severe it melts every-

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thing in its path, including people.

Heaven help the direct reports of the heir apparent who didn't get the top slot. Siberia may seem a warm and welcoming place to those who got caught on the wrong side of the succession plan.

It doesn't have to be this way. While managers can have little input into succession at the top, they can have much input into their own successors. Here are some things for managers to consider.

Identify candidates. Succession begins with identifying not only the next in line, but the one with the most to offer the organization. Look for men and women who demonstrate initiative and autonomy; these folks want to do more because they can do more. Enthusiasm is good, too. But don't be blinded by too much willingness; some very capable folks may feel it is unseemly to promote themselves. Therefore, you as a manager need to communicate your willingness to listen to new ideas as well as to look for people who want more responsibilities.

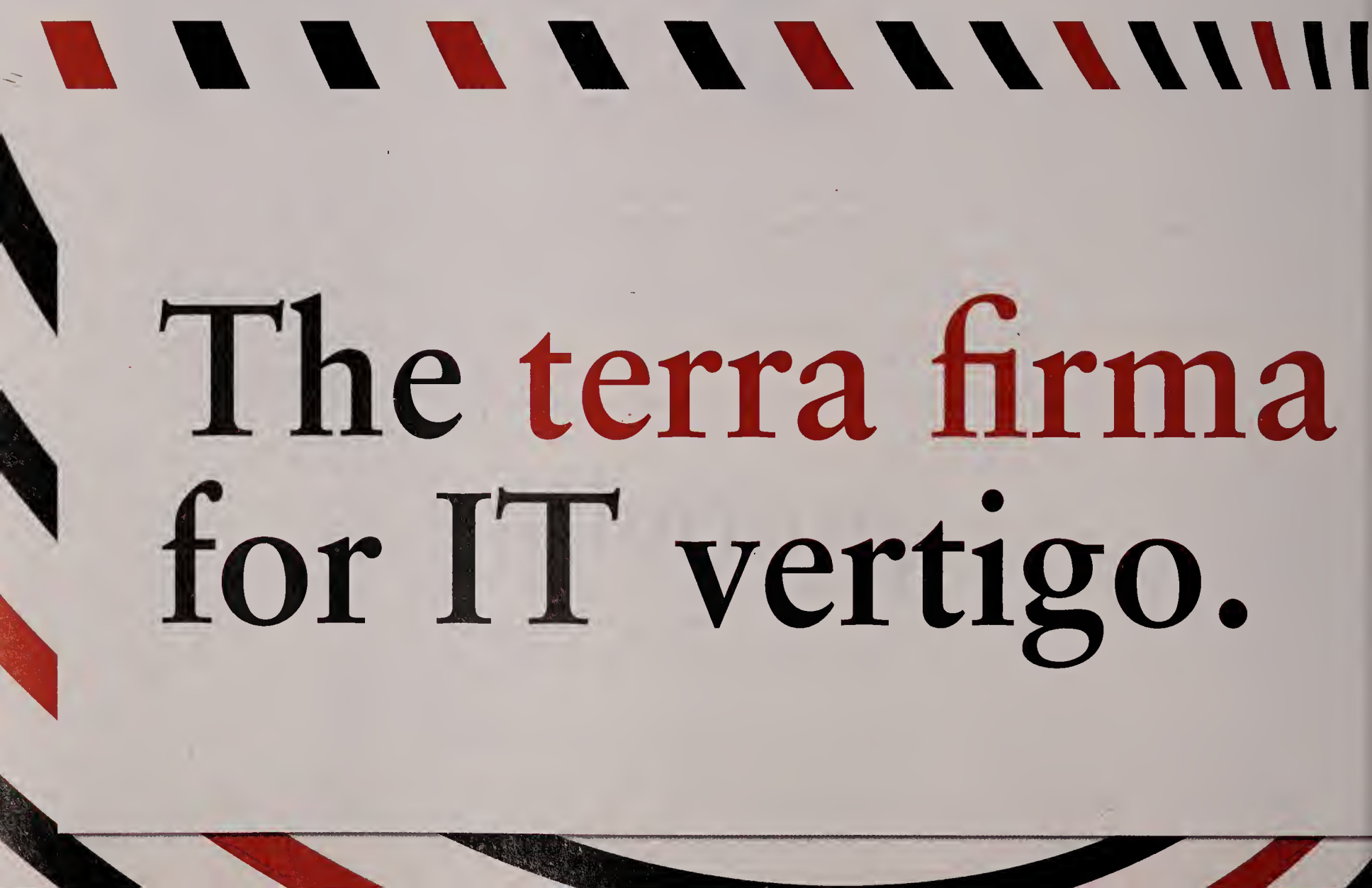
Develop those candidates. Every successful leader got to where he is now by bringing others along for the journey. Leadership, after all, is not a solo act. Some managers are

The key to successful succession planning is to stop viewing it as a zero-sum game with one winner and one loser. It should be regarded as a natural progression in the health of an organization.

fearful that if they help their subordinates, they will lose their jobs. Well, that does happen, of course, but most often they lose one position only to gain another one further up the ladder.

The mark of a good leader is the willingness to develop others and help them with their own careers by providing challenging assignments, offering cross-functional assignments, recognizing contributions and delivering continuous coaching. Opening the door for others and, more important, teaching them about the business and how to navigate the hallways of power, demonstrates strength.

Look to grow your own skills. By developing others, you are developing yourself. Teaching not only requires effective communication; it demands mastery of a subject as



The terra firma for IT vertigo.

well as a willingness to learn more in order to share more.

Sometimes the learning is about acquiring new skills, but often the learning involves getting to know more about the talents and skills of your people. And that might be the most valuable leadership lesson of all.

Natural Progression

The key to successful succession planning is to stop viewing it as a zero-sum game with one winner and one loser. It should be regarded as a natural progression in the health of an organization. While the one who fails to get the top spot may leave (and often for greener pastures), her people may not wish to move, nor should they. They should be regarded as cherished members of the team; after all, it was their contributions that put their leader into the running in the first

place. No organization can afford to lose that kind of talent.

Barry Diller, who, like Sumner Redstone, built a media empire, once quipped

to a Harvard Business School audience, "In the entertainment business you don't really have to be a good manager, and some people would even argue that you shouldn't be because it won't do you any good." To that end, he learned to push decision making throughout the ranks rather than hold all the power for those at the top.

Now working outside Hollywood, Diller has changed his tune. He cautioned the B-schoolers about management: "You've really got to set time and thoughtful care to it." That's good advice for anyone in any field and at any level, including those thinking about who's next in line. After all, good ideas, like good people, can come from anywhere in the organization. It's simply a matter of knowing where to look. **CIO**

John Baldoni is a leadership and communications consultant who works with Fortune 500 companies as well as with nonprofits. He is the author of seven books on leadership. His latest, *Lead by Example: 50 Ways Great Leaders Inspire Results*, will be published in October. Visit his leadership resource website at www.johnbaldoni.com. To comment on this article, go to www.cio.com/article/192851.



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How to Avoid a Privacy Lawsuit

Five important lessons for CIOs about text messaging and privacy from the case of *Quon v. Arch Wireless*

Lieutenant Steve Duke, a commander with the Ontario, Calif., Police Department, never intended to be a bill collector.

But two years into the Police Department's contract for text-messaging services, Duke found himself regularly requesting that some officers pay the per-character overage fee for the wireless service, according to a recent ruling in a lawsuit against the Police Department. The Ontario

Police Department had settled on a 25,000-character monthly limit with provider Arch Wireless, yet some officers were exceeding the limit by up to 15,000 characters. The department's solution: If officers paid for the overages, it would not audit their communications to determine what portion was for legitimate business use.

But Duke became fed up with asking officers to pay for their overages. With the chief of police, he decided to audit one worker who had exceeded the limit to find out if excessive personal use of the wireless devices was responsible, according to the lawsuit, *Quon v. Arch Wireless*. In doing so, the department violated the officer's privacy rights and the rights of at least three people with whom he'd communicated, the U.S. Court of Appeals for the 9th Circuit ruled in June.

The court case serves up several lessons for

CIOs about how to handle communications monitoring, the dangers of not having a privacy policy and whether third-party communications services present unwanted liability.

1. Set expectations of privacy.

The first lesson for CIOs is that an informal privacy policy is as binding as a written one.

Duke had already communicated an informal privacy policy to department employees, essentially guaranteeing their privacy, as long as they paid their bills. His frustration with the overages came to a head in 2003 when SWAT team member Sgt. Jeff Quon exceeded the limit for the fourth time in two years, according to court filings.

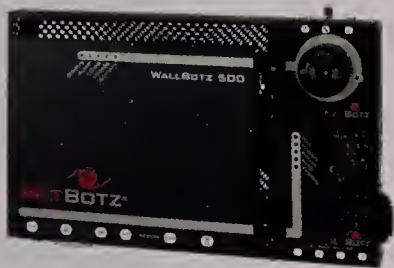
"He told Sergeant Quon it was not his intent to audit employee's [sic] text messages to see if the over-



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age is due to work related transmissions," a police investigator wrote in a memo describing the investigation into Quon's usage of the text-message device. "He advised Sergeant Quon he could reimburse the city for the overage so he would not have to audit the transmission and see how many messages were non-work related."

While many companies have privacy policies that explicitly allow employee monitoring, this case hinges on the Police Department's lack of a text-messaging-service policy, says Sinan Aral, professor of information, operations and management sciences at New York University's Stern School of Business and an affiliated professor at MIT's Sloan School of Management. "The ruling reaffirms that employers can override an employee's expectation of privacy by an explicit policy stating so, as long as it is explicit, written and unambiguous," Aral says.

2. Bring management in-house, if possible.

Having a third-party communications provider was another problem for the Ontario Police Department.

The department contracted with Arch Wireless to provide text-messaging devices to all its officers in 2001. In doing so, it inadvertently split its role: While the police department was the customer, it was not the user.

The court found that Arch Wireless had violated the privacy of a user, Sgt. Quon, and three people with whom he had communicated when it handed over a copy of his text messages from its servers without a subpoena. If the services had not been provided by a third-party communications provider, the department would have been free to access the information,

provided its privacy policy allowed auditing, Aral says.

"The ruling does not address content on corporate servers," he says.

"Because most e-mail is stored on company mail and [Microsoft] Exchange servers, for example, the case does not apply to the company auditing those communications."

The ruling also found that text-messaging services are "electronic communications services," as defined in the Stored Communications Act, and not a "remote computing service." While a remote computing service can give a user's information to the subscriber without a court order, an electronic communications service is forbidden by law to surrender such data.

3. Avoid charging your employees fees.

Asking officers to pay for their excessive text messaging reinforced the idea that the users had some ownership of the communications and a right to privacy, says Marshall

The department had a right to determine if the text-messaging service was being used for personal reasons, but the way it investigated the issue was wrong.

Van Alstyne, an associate professor of management at Boston University and a research scholar at the Sloan School. "Because the officer was paying for the overages, he had a right to not be reviewed," he says.

The court likened text messages to e-mail that flows through a third-party provider. While it is not reasonable to expect privacy in the addressing of such communications, it is reasonable to expect the contents of the messages to remain private.

Sgt. Quon and other users "did not expect that Arch Wireless would monitor their text messages, much less turn over the messages to third parties without [their] consent," the appeals court judges stated in their ruling.

4. Stop, think and evaluate before auditing.

The department had a legitimate right to determine if the text-messaging service was being used for personal reasons, but the way it decided to investigate the issue was wrong.

If top-level management had discussed the issue, they would have seen that there were other ways to determine personal use of the text pagers, says NYU's Aral. They could have warned people that their messages would be audited during a future month, or they could have had the text-message transcripts sent to the user, who would then be responsible for redacting any non-work-related messages.

They also should have first created an explicit policy and considered the impact. "Firms should evaluate whether reviewing messages held by a third-party provider merits an explicit policy stating that they can evaluate those messages," says Aral. Increasing productivity and liability management are reasons to have monitoring in place, he says.

5. Automate the monitoring.

If a company decides to audit workers on a regular basis, automating the monitoring can provide some privacy protections while giving the company the benefits of oversight, says BU's Van Alstyne. Such systems can work without any management oversight at all. By creating benchmarks based on the data and showing users where they fall in the spectrum of use, the Police Department could have indicated to Quon and others that their use had become extraordinary. **CIO**

Robert Lemos is a freelance writer for CIO.com. To comment on this article, go to www.cio.com/article/426965.



Privacy Resources

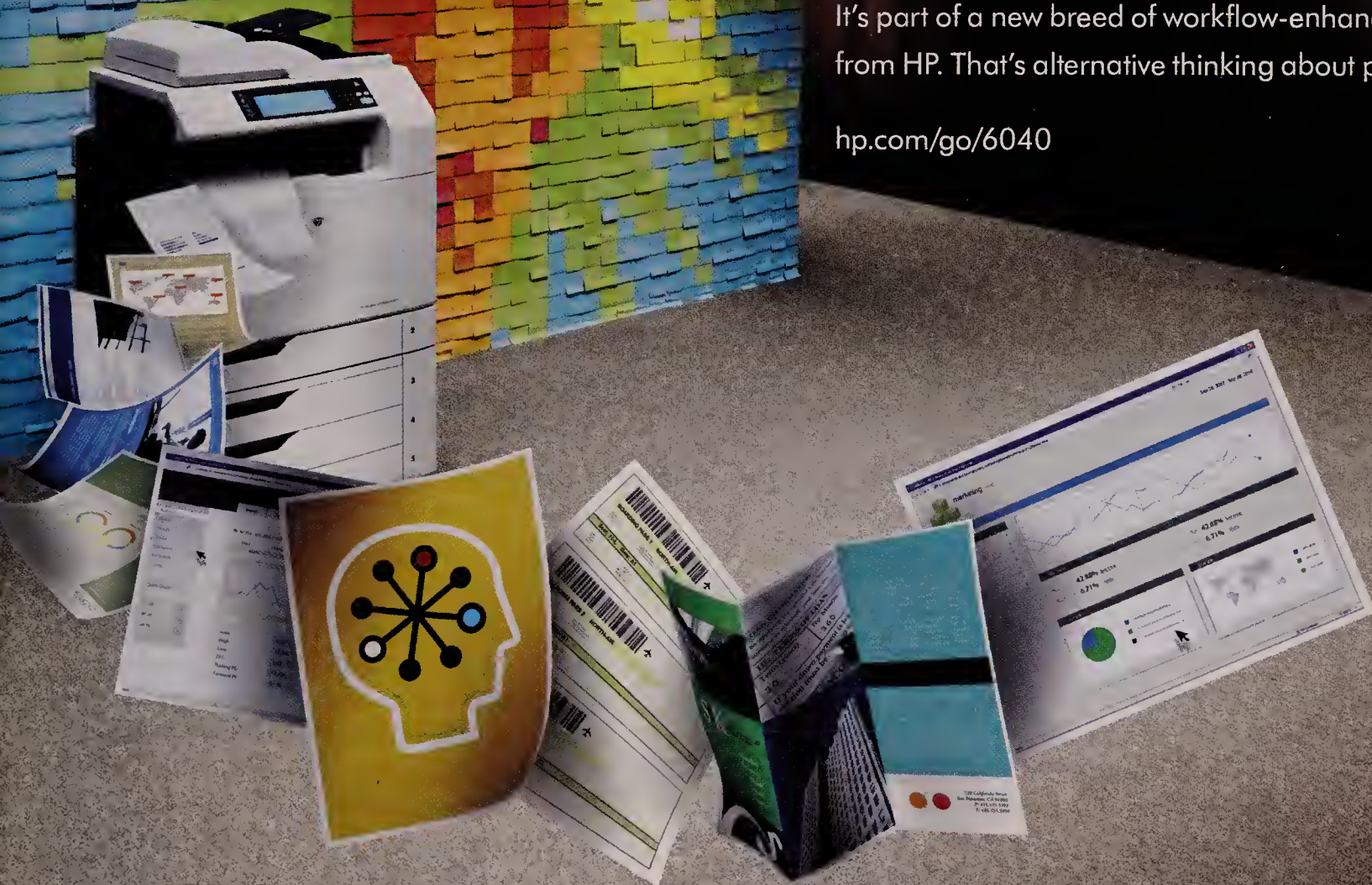
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WHAT DO YOU HAVE TO SAY?



Your Own Worst Enemy

Even when companies say they want a CIO with detailed technical knowledge, fulfilling their expectations can prevent you from being effective

Don't you love the idiocy of some CIO job descriptions? They're the ones that demand skills in configuring servers, designing the website, creating a long-term strategy, 20 years of experience plus a deep track record in a subbranch of financial services.

Or that specify knowledge of an arcane, perhaps obsolete technology. In my perusal of ads on CareerBuilder.com recently, I even saw one for a bank that

required the ability to lift at least 15 pounds.

Does experience with a specific technology category or product matter? Not so much. Let's think about both the technology requirements of most CIO jobs and what are (or should be) the drivers behind an enterprise intent on recruiting those requirements. Most of the time, companies that require a CIO candidate to possess specific technical skills are shooting themselves in the foot. Here's why, even if you meet the criteria and get the job, you shouldn't define your role based only on those qualifications.

A Screening Mechanism

CIOs make good money. Their compensation averages \$237,000, according to CIO's "State of the CIO 2008" survey. At that pay level, the job will cer-

tainly involve managing (or hiring and then managing) a staff. Unless we're talking about a startup company, the person who is hired will inherit existing technologies along with a posse of eager tech and services vendors. Most CIO openings specify a minimum of 10-plus years of experience—and more in the larger firms. And with that experience, most enterprises expect to see a long and successful track record of implementing application projects.

Firms are also increasingly intent on using technology to change processes, get new products up and running quickly, compete more effectively for customers and provide better service. They want CIOs they can understand (no techno-speak, please) and who understand business. So even if a CIO enters with a laundry list of technical experience that matches what the company asked for in the job description, chances



Unified Communications: Dynamic Integration Starts With Mobile Devices

S. Dale McHenry, VICE PRESIDENT, ENTERPRISE DATA NETWORKS, AT&T

McHenry's product team manages AT&T's data and IP networking services for businesses. Since joining AT&T in 1983, McHenry has held roles in engineering, finance, network engineering, marketing and product management.

Increased business velocity is driving more real-time communication and innovation. This means businesses need to interact in increasingly collaborative and spontaneous ways, says McHenry. The challenge involves managing across a range of emerging communication choices and understanding who is available and by which means. This is the promise of unified communications.

What's the impact of increased business velocity?

In today's global marketplace, there is pressure to operate in real time to

The velocity of business increases the importance, intelligence and role of mobile devices.

respond to customers, business partners and employees, 24/7, anywhere in the world. The classic calendar-based workday is a thing of the past, replaced by a dynamic workday. The velocity of business increases the importance, intelligence and role of mobile devices.

What types of communication tools are being used?

In a typical day, most of us mix text messaging, voice mail, simple email, conference calls, attachment-rich email, basic phone calls and face-to-face meetings. There's a mix of scheduled and spontaneous. Each option is best suited for particular types of interactions, ranging from very simple "pings" to complex multiplayer meetings. New technologies such as telepresence and application-enabled mobile devices are opening up new collaboration opportunities. The

added intelligence delivered by presence technologies and the unified communications that tie these tools together will take this all to the next level.

Why is mobility so important?

Mobile devices play an important role as an "always on" pathway for simple interactions—for example, quickly handling transactional emails or phoning a colleague. Studies show that PDAs create an extra hour of productive time each day for users, but there's more to come. The devices today are mostly for voice, texting and simple email. The ultimate promise

is being able to access corporate applications and to complete complex transactions. There's been tremendous response from Apple iPhone application developers to grow this kind of functionality and enable transactions you can't complete on older devices. Seamless, global roaming capabilities will gain importance.

How does telepresence fit into communications strategies?

Complex, real-time human interactions have traditionally required face-to-face meetings. Cisco TelePresence captures the human dynamics of the most intricate types of business meetings using features such as life-size images and directional audio. The AT&T Telepresence Solution leverages our secure, high-performance VPN platform and offers a "meet me" service, so your firm has control over scheduling and attendance. To facilitate

adoption and implementation, AT&T provides installation and management services as well as a simple monthly all-inclusive price structure. Telepresence supports business sustainability initiatives to "go green" through reduced travel and also improves the productivity of busy professionals.

What is the role of unified communications?

It's really about the dynamic integration of all devices and options. You can think of it in terms of the traditional role of the secretary—someone who knows your targets' whereabouts and how to reach them, knows whether they can be interrupted, bridges on new parties and can schedule interactions. Unified communications is a fervent attempt to replicate all those smarts. Since people always carry their mobile devices with them and therefore are enabled with voice, text, email and calendar tools, mobile devices are a great place for dynamic integration to start.

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are she's going to spend virtually no time in the new job using those skills.

In reality, technology requirements in CIO job descriptions are there to discourage candidates from other industries that use different products or from other departments of the same enterprise who are familiar with existing processes but not with the specific products that support them. Detailed technology requirements give the HR recruiter a checklist for eliminating candidates, not a way to find innovative thinkers who can bring a fresh perspective on compelling business changes.

Instead, CIO job postings should be less specific. Biotech companies shouldn't mandate biotech company experience. Hospitals shouldn't look only at candidates who have implemented a specific healthcare package. In some geographical locations, that could narrow the field to fewer than five people, four of whom have jobs they like and won't leave.

Companies should identify thorny enterprise pain areas (weak change management, cumbersome sales processes, lack of standard customer service processes) or other problems and should look at individuals with a track record for solving such problems. Most firms will benefit from talking with candidates from industries other than their own and with professional backgrounds other than IT.

Asking such candidates how they would tackle the organization's thorniest problems could reveal refreshing insights and new possibilities, even if the candidate isn't selected.

The State of the CIO

For more insight into the **CIO ROLE**, go to www.cio.com/article/163700.

CIO.com

Enterprise execs generally look at candidates with backgrounds other than IT or outside their industries only when they are extremely frus-

trated by current IT performance. But that doesn't have to be the only time to seek a variety of experiences.

Even recruiters for large companies make this mistake. They're often looking to poach a name-brand CIO from another company of the same size and industry. They look for someone who has done a transformational project exactly matching the proposed project of the search client's—a broad-based SAP implementation, a global CRM system.

What they should want is someone from another industry who has demonstrated process or innovation mastery, regardless of which package he implemented and perhaps regardless of whether he was a CIO or a business project champion.

When Technical Knowledge Is Necessary

Sometimes a firm needs a CIO with deep technical knowledge. Several factors come into play here, including:

Company size and growth potential. The smaller the firm and the greater the likelihood it will remain small,

Companies that require a CIO candidate to possess specific technical skills are shooting themselves in the foot.

the greater its need for a hands-on CIO. A small shop needs someone who understands how networks are configured, who can debug PC problems and sync up cell phones and e-mail servers with one hand while advising the CEO on new app purchases and device trends with the other.

Startup companies especially need a startup IT leader who can do as well as lead. An ex-consultant with years of hands-on experience can be ideal as a CIO.

Staff size and ability to hire. If there are fewer than 15 people in IT, the CIO is really a manager. No matter how you subdivide the organization, you can't make a technology decision without becoming heavily involved in reviewing the choices and clearly understanding the differences between vendors and products. This CIO must have strong familiarity with all of IT's technical span of control, even as he has to bond with other business execs and grasp business strategy.

As the organization grows, the CIO can develop a team of leaders and individual contributors who have the experience in a specific category or topic and can stand in the CIO's stead when negotiating with vendors and service providers. These CIOs are best cultivated from the ranks of the current apps or infrastructure managers regardless of industry.

When to Leave Tech Details Behind

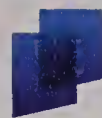
Some CIOs with tech backgrounds just love fiddling and are constantly tempted to gravitate to their tech roots. They become CIO hobbyists: playing with new tools and websites, helping the CEO with laptop or cell phone problems, meddling in and second-guessing the assignments of their staff.

These CIOs hide behind these distractions as a way to avoid investing time and energy into learning about their peers, the businesses they run and their top challenges. If you're one of these CIOs, you risk leaving business execs with a strong impression that you're a sandbox CIO with lots of toys and time to spend on tasks that should be delegated.

Overly techie CIOs who ignore their business relationships will eventually be fired by frustrated execs, who may be doomed to repeat history, getting the same kind of CIO the next time based on a techie job description and screened candidates whose skills exactly match it. **CIO**

Laurie M. Orlov does research and consulting on business and technology strategy. She is a former vice president and principal analyst at Forrester Research. To comment on this article go to www.cio.com/article/446491.





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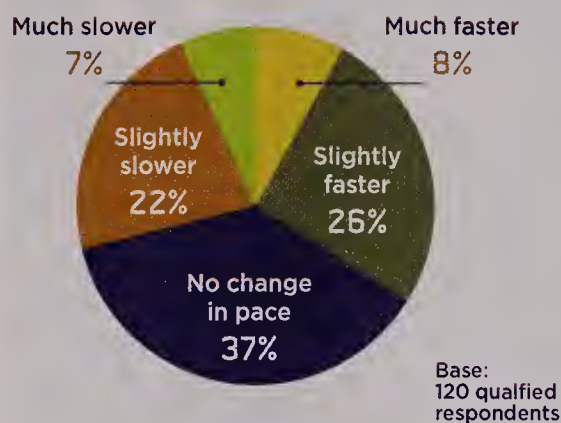
IT Spending in a Down Economy

**IDG Research
Shows Smart
Investments
Make for
Competitive
Advantage**

Today's economic woes have many companies reeling. But what impact has the recent downturn had on technology investments? Have CIOs slowed their spending? Changed their focus?

The answer, according to a recent survey by IDG Research Services, is largely "no." Many IT leaders aren't pulling back on their spending and, in fact, are finding that continued investments in IT initiatives is the surest path to reduced long-term costs and improved efficiencies—helping businesses weather even the worst economic conditions.

Q: How would you describe your company's technology deployment pace versus 12 months ago?



source: IDG Research Services, Aug. 2008

"Strategic investment in technology is important at any time, but it's amplified in economically challenged times," says Joseph Staples, senior vice president of worldwide marketing at Interactive Intelligence Inc., an Indianapolis-based provider of business communications software and services. "During this time of economic uncertainty,

CIOs have an opportunity to gain an advantage with smart technology decisions as competitors hold their position or even cut back."

Business Has Slowed, but IT Spending Hasn't

Although 23 percent of respondents believe that difficult economic conditions have slowed their business growth, a similar number report having either made no change to or actually having accelerated their IT spending. Economic constraints call for more conscientious decision-making, and that has CIOs focusing on investments that really make a difference.

In fact, a large majority is investing in initiatives that impact the bottom line and promise hard ROI. Over the next 12 months, cost savings (53 percent) is the top benefit organizations project to gain from their most critical technology investments. Other expected

benefits include streamlined business processes (48 percent) and increased user productivity (47 percent).

For example, when asked which technologies they would allocate additional monetary resources to, top answers included collaboration tools and business process automation. "Both deliver cost savings and efficiencies," explains Staples. "These would include tools and technologies that improve overall communication inside and outside the organization."

IP Telephony Investments Make the Cut

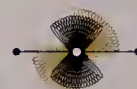
There are, of course, plenty of technologies that fit that bill. But one—IP telephony—stands out, with more than two-thirds of respondents reporting to be in some stage of deployment. This reflects both current and planned deployments reported in a similar 2007 study conducted by IDG Research Services.

"IP telephony, which has been a hot topic for the past 24 months, shows no real slowdown in deployment," says Staples, "most likely because its benefits mirror the overall priorities in general IT spending."

To that end, respondents expect IP telephony to save their companies money and improve efficiency. Specifically they point to the ability to better support remote and dispersed employees, reduce staff resources devoted to system administration, enhance employee productivity and gain competitive advantage.

Bottom line: 44 percent of respondents believe that investments in IP telephony can help their organizations get over the economic slump through expected long-term cost savings. And that means those CIOs who continue to invest in IP telephony, can shorten the gap or increase their lead "while their competitors sit back and read the *Wall Street Journal*," concludes Staples. ::

Go to www.cio.com/whitepapers/inin-economy for a free download of the complete research results with insightful commentary from key respondents.



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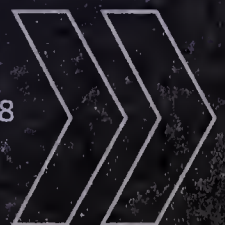
ARMED for SAFETY

BY KIM S. NASH

Reader ROI

- :: How IT can reduce business risk
- :: Challenges integrating wireless applications with enterprise systems
- :: Considerations for a mobile user interface

Cover Story begins on Page 48



Since 9,000 B.C., when cattle served as the world's first money, people have plotted to steal it. Herders knew that taking too long to get cows across Mesopotamia meant leaving yourself open to a deadly arrow in the heart.

Now, as then, time makes money handlers vulnerable.

Last October in Philadelphia, two Loomis guards were killed as they collected cash and checks from a Wachovia ATM on their route. Surveillance tapes from that morning show a man sat in a car nearby, watching the armored truck arrive.

One guard went to the bank machine, while the other remained with the truck. The killer put on gloves, walked over and shot them both with a 9-mm handgun, police said in published reports, getting away with a bag of deposits from the ATM. A man arrested in the case is charged with murder and robbery and awaits trial. Companies in other industries may not face such dire threats, but analyzing and mitigating corporate risk, in whatever form, is a growing part of the CIO's job. (Read a related story, "Hot Jobs: IT Security Manager," Page 26.) Of 316 IT leaders surveyed by *CIO* in June, 62 percent say they are very or extremely interested in risk management, up from 58 percent last year. And more CIOs are applying IT to help manage corporate risk—38 percent, according to our 2008 "State of the CIO" survey, up from 30 percent a year earlier.

Wayne Sadin, CIO at Loomis, knows that no amount of technology will eradicate crime. But he's counting on a new enterprise wireless application to shrink Loomis's exposure to it. Guards will use a smartphone system to replace the tedious, error-prone paperwork they normally fill out by hand, making each stop on a route faster.

The new application is rolling out across the country this year and next but hasn't yet made it to Loomis's Philadelphia region. It's hard to know what effect it might have had on the robbery-murder there. But computerizing the fieldwork of guards cuts the amount of time—and thus the level of vulnerability—at each stop, Sadin says.

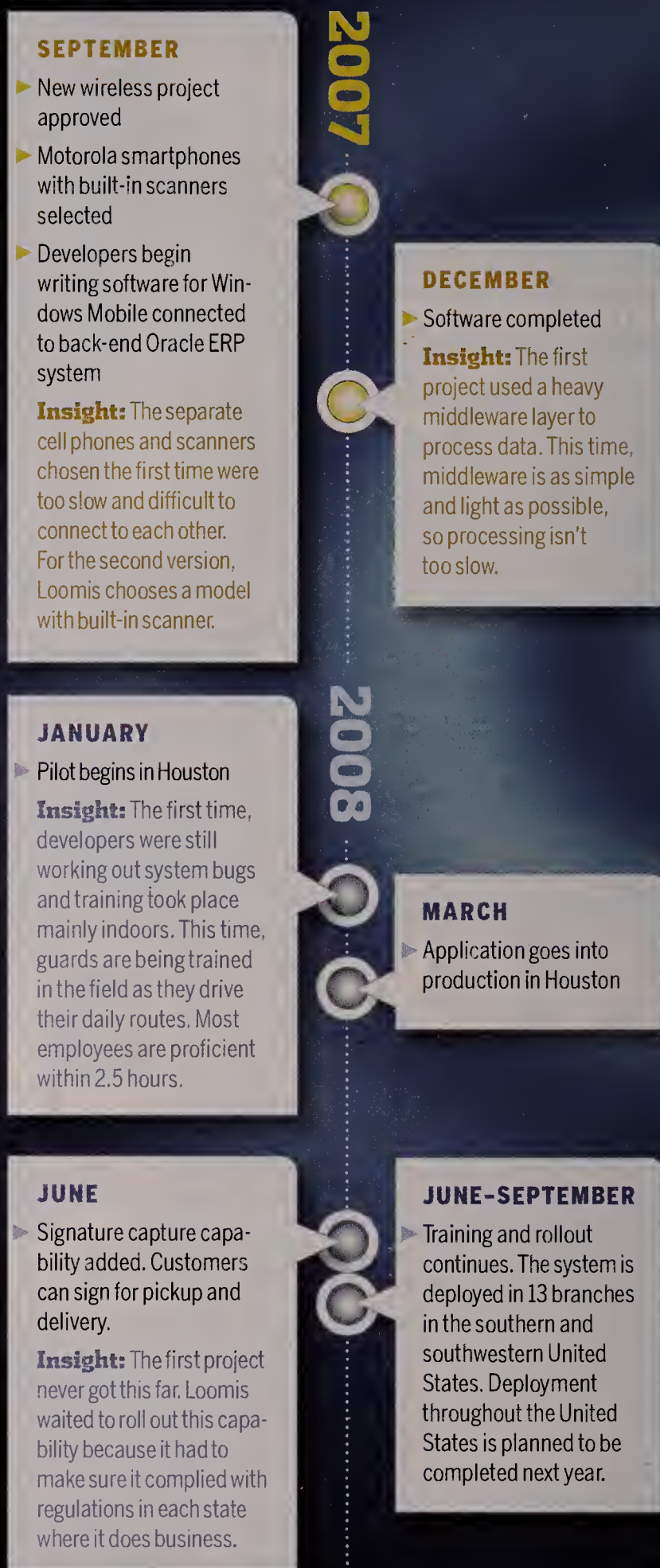
Plus, the real-time system produces more accurate information sooner about inventory—customers' money—in transit each day. Loomis can then offer the data to those customers, such as banks, retailers and restaurant chains. This helps Loomis achieve another goal familiar to many CIOs: Reduce the risk of customer flight. "Information about money is sometimes as valuable as money itself," Sadin says. "If we can give people that, it makes it harder to switch away from us."

The project itself involves risk: Building core busi-

Moving Fast to **REDUCE RISK**

Loomis's first enterprise wireless project took six months to develop and was killed after another six. With insight from that first attempt, Loomis built and tested a second application in just a few months.

—K.S.N.



STOP TALKING START DOING



AF·FECT

-v. to produce a change or accomplishment;
to make your work matter.

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Wireless-enabled logistics services can help Loomis retain customers, providing a competitive advantage, says CIO **Wayne Sadin**.

ness applications for wireless capable phones is still a relatively new concept for midsize companies like Loomis, says Leonard Simmons, Global Products Manager of Mobility at CSC. Fortune 500-caliber companies are further along in wireless experimentation and adoption, Simmons says; they've often given employees wireless devices for personal productivity applications, such as e-mail, and added more complicated applications after that. (CSC is not working with Loomis on its project.)

No matter the size of the company, though, going wireless means jumping hurdles, Simmons says. For example, security is usually a top concern and sometimes delays wireless projects. Small screens and buttons on a smartphone automatically limit what developers can do with the user interface. Perhaps most critical is integrating new front-end technologies with whatever back-end software applications the company runs. In Loomis's case, that's Oracle's E-Business Suite.

STOP TALKING START DOING



DE·FY

-v. to bend the rules;
to take measured risk for global success.

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Loomis is also dealing with an issue of its own making: Sadin and his team had to convince the rest of the company that this wouldn't be a repeat of a similar system tried two years ago but abandoned after six months. This time there's different software, hardware, interface and architecture, says Derek Pickett, director of enterprise systems at Loomis. "We learned a heck of a lot from that project," says Pickett. And as the new application moves from pilot to deployment, Loomis is still learning.

MOVING MONEY

Sadin, who has spent his 30-year career mainly at various banks, says Loomis's approach to IT, which traditionally slanted toward logistics, must incorporate approaches familiar to manufacturing and financial services.

"Just like screws, paper clips or French fries, we manage inventory, and our inventory is cash," Sadin says. "We're a factory."

Consumers made \$34 trillion worth of credit- and debit-card swipes and other electronic payments in 2006, according to a Federal Reserve System study released in March, but cash remains king. About \$829 billion in U.S. currency circulates worldwide, according to the Federal Reserve Bank of New York. That's partly because most of the world lacks the technology to do meaningful digital commerce, reports the World Economic Forum (WEF), which ranks countries by the degree to which they use information technology.

Indeed, \$12 billion in cash from the New York Fed—that's 363 tons of paper money—was flown to Baghdad in 2003 and 2004 to grease the wartime economy in Iraq. Much of it arrived stacked on pallets in bricks of \$100 bills.

Banks reposition money all the time, says Mark Clark, senior vice president of strategic growth at Loomis.

Major sporting events, such as the Indianapolis 500 or the Super Bowl, draw tens of thousands of fans. In anticipation of crowds giddy to spend, banks contact armored car companies such as Loomis to order delivery of extra volumes of crisp, dispensable twenties brought to regional distribution centers. It's easier that way to keep customer ATMs stocked, Clark says. Loomis also serves retailers, convenience stores and casinos, among other customers.

Big-time money handlers often describe their business in manufacturing terms. Literature explaining how one part of the New York Fed works, for example, discusses coordinating "shipment" of "inventory" with five global banks and storing currency in "cash depots" until an "order" comes in.

The Fed, like other entities that need to move money, uses various armored car companies for the job. And there are many. Three players dominate the \$2.8 billion cash manage-

LOOMIS'S FIRST ATTEMPT AT A WIRELESS SYSTEM DIED ON THE VINE. This time, the company spent more money on the hardware and more time perfecting the software.

ment industry in the U.S.: Brink's and Loomis, which are private; and Garda, which is public in Canada. But many small regional companies constantly nip at the bigger guys' business. Loomis posted \$550 million in sales last year, Clark says.

Pivotal in reaching that goal is Loomis's regional cash management facility about 45 miles west of Boston (the company does not want to reveal exactly where). The center is one of the company's busiest.

Mark Geib, area general manager for southern New England, won't say how much money flows through the low brick building. But as he strolls the noisy coin and bill processing rooms, he notes that the volume is enough to warrant two shifts of workers, five days a week, sorting, counting and packaging, and driving trucks.

The Boston-area facility doesn't yet have the new wireless system. For now, things run the old-fashioned way, Geib says. Drivers arrive each morning and grab their route manifests—printouts that tell them where to stop and what to unload or pick up.

Trucks are loaded with that day's deliveries. That may include cases of quarters, rolled and boxed, headed to a store or restaurant. Perhaps clear plastic bags are stuffed with bundles of \$20, \$50 and \$100 bills destined for another of Loomis's regional facilities.

Departures are staggered every 20 or so minutes. A team of two or three guards might make more than 10 stops on a route. Trucks start coming back midafternoon to unload. There's only one door open at a time at the loading docks. "They come in one door and drive out the next door," he explains, "for efficiency and risk [management]."

WIRELESS APPS = LESS RISK

The business has always been risky. Loomis, formerly known as Loomis Fargo, is the oldest cash management company in the U.S., tracing its roots to the Gold Rush out West. The Fargo side began in California in the 1850s with stagecoaches. The Loomis side started with Alaskan dogsleds in 1905. They merged in 1997.

When the Boston-area facility gets the wireless application later this year, guards will be trained in how to use ruggedized

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INTELLIGENT COMMUNICATIONS



Loomis's biggest challenges were linking the wireless application to its Oracle systems and designing the phone's user interface, says **Derek Pickett**, director of enterprise systems.

Motorola devices. A combination cell phone and scanner, the MC70 models are about six inches long, three inches wide and weigh about a pound. Each unit also has a Velcro strap by which to hold it in either hand. "You have to keep your gun hand free," Sadin notes.

The devices run Microsoft's Windows Mobile operating system and a homegrown application in which guards can record details about their progress during a route, such as arrival and

departure times at each stop, along with other details about the cargo they pick up and deliver. The interface allows keypad typing and tapping on menus. A built-in scanner lets guards check in and out bar-coded packages filled with cash, coins, checks, food stamps or postage stamps. Depending on where the package originates, either Loomis or the customer places the bar codes. Then in real time over AT&T's cellular network, all the data is sent to Loomis's Oracle E-Business ERP sys-

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Guards spend less time recording route information than they did before on paper. This lets them finish stops more quickly, WHICH DECREASES THEIR PHYSICAL RISK.

tem in Houston.

Before now, that work was done on paper by guards and keyed into Oracle later by clerks in each branch who “debrief” the guards after each shift.

Early results from a pilot in Houston in January and a subsequent rollout there in March show guards spend less time recording route information than they did before on paper. This lets them finish stops more quickly, which decreases their physical risk, says Chris Squier, an operations manager in Houston.

The new system also eliminates 30 to 40 pieces of paper on each route, including delivery sheets, manifests and customer signature forms, Squier says. All that information now resides on the smartphone, which also captures customer signatures required for pickups and deliveries, like similar applications used by UPS and FedEx.

Because the data is digitized from the start, there’s no need for anyone to type it in later. The Houston branch has eliminated three debrief positions, Squier says.

Loomis, as a whole, meanwhile, can make decisions that decrease its corporate risk.

For example, it sets limits on the amount of money a single truck can contain. (Company officials won’t specify how much.) You don’t want to send an overloaded truck through some violent neighborhoods, and if a truck is too full, guards can’t complete all the pickups on their route because there’s no room for more money on the truck. Sometimes, however, a guard may expect to pick up packages valued at a certain amount at a convenience store, based on past history, and finds bags up to four times as much instead because the store had a good weekend.

Such discrepancies are common, Sadin says. Now they can be relayed immediately, via the wireless system, to branch managers. Loomis guards must follow a specific protocol to handle exceptions during their daily routes. When something unexpected happens, they either follow their training procedures or phone a branch manager for instructions. “Now we can recognize what’s happening and use the handheld to advise proactively,” adds Sadin. That’s another time-saver and risk-mitigator.

More About Wireless

Read about the promise and limitations of wireless applications. Go to **ABC: AN INTRODUCTION TO WIRELESS** at www.cio.com/article/40797.

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THE SECOND TIME AROUND

Loomis’s first attempt at a wireless system died on the vine.

In 2006, Loomis contracted with a software-on-demand company for a similar application, paying a monthly fee, says Pickett, the enterprise architecture director. The hardware, a Nextel cell phone, didn’t have a full-fledged OS, such as Windows Mobile. It was the size of a candy bar and delicate, meaning it couldn’t stand up to drops and jostles in a truck day after day. A separate scanner had to be brought along to record bar codes.

Going with a plain cell phone, and a small one at that, limited the functionality of the application, Pickett says. The user interface relied on many layers of menus. The size of the screen and the lack of a robust operating system meant it wasn’t possible to use many icons to simplify navigation.

The on-demand service came to be viewed as needlessly expensive, Pickett says. He declines to name the vendor. “We realized [that with] the money we were planning to pay them over two or three years, we could build our own system,” he says. “The calculation was something like, within two years we would recoup our costs, versus paying them endlessly.”

This time around, Loomis spent more money on the hardware and more time perfecting the software, he says.

Where the first phone and scanner pair cost about \$350 together, the Motorola MC70s, with built-in scanner, are \$1,200 each. “It looks like a piece of equipment, rather than a phone,” Pickett says. “We haven’t broke one yet,” Nick Olivas, an operations supervisor in Houston, adds.

As for the software, Pickett foresaw two main challenges: linking the wireless application to Loomis’s existing Oracle systems and improving the user interface on the phone itself.

The first time around, Loomis used middleware between the phone and Oracle that turned out to be pretty slow because it handled a lot of the transaction processing. Also, the separate scanner had to be connected to the Nextel phone at each stop, so that bar-coded data could be sent to the back-end Oracle systems. “That could take two to five minutes,” says Squier, the Houston operations manager, “and it could take 15 or 20 minutes to get data into the phone,” he says.

That’s a big deal when a single stop is supposed to last, on average, no more than 15 minutes.

This time, Loomis used integrated phone-scanner hardware to

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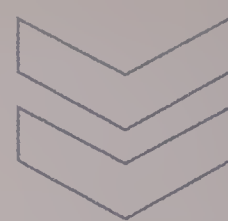
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Keeping electronic estimates of the value of cargo lets Loomis post the information quickly to customer accounts. When companies get accurate credit faster, they can make decisions faster on what to do with their money. “WHEN IT’S SITTING IN OUR TRUCKS OR ON OUR SHELVES, IT’S A NONPERFORMING ASSET. That’s good for no one.” –WAYNE SADIN, CIO, LOOMIS

avoid connection issues. Loomis also developed the software with a very “light” middleware layer, to be faster. As Pickett explains, rather than having the middleware translate data from Windows Mobile formats to Oracle, then send it, data is sent as is, then translated after it reaches the Oracle system in Houston. “We didn’t get into any middle-tier processing. That’s been a big win,” he says.

Decisions about how to design and deploy the middleware architecture can make or break a wireless application, says CSC’s Simmons. Presumably, Loomis doesn’t have a lot of different back-end systems to contend with—Oracle is it—so the company could rely on doing data translation on the back end, he says. But for larger companies that need to deal with several different enterprise systems, a more strategic and multivendor approach is required. “Middleware might have to do a lot of the work in that case.”

As for the interface, most important for Loomis on the second try was creating the ability to move quickly between functions using graphical buttons on screen—mimicking existing processes and minimizing manual data entry by accessing data from central servers. The first project showed that forcing big hands to manipulate many tiny buttons isn’t viable.

Olivas was one of the first at Loomis to use the new application and says the touch screen is “simple,” requiring about 90 minutes to master, top to bottom. “Once you get used to it, you just start rockin’. Everything’s more accurate.”

Despite those improvements, the IT group at first anticipated resistance when it came time to start testing the new system last January. It wasn’t unwarranted, says Squier. “Our employees suffered” through the first project, he says, “and they had a sour taste in their mouths.” But rather than turn them off, the experience made them eager to try the new iteration, he says. “I wanted the opportunity to roll out the new version because of everything we went through before,” he says, laughing.

BETTER CUSTOMER SERVICE

Because Loomis, like others in the armored business, views itself as more than a group of gun-toting couriers, Sadin wants to use technology to open the door to more sophisticated cash management services.

For example, doing business on paper meant customer accounts weren’t updated right away. But keeping electronic estimates of the value of cargo collected and dropped off as drivers move from stop to stop lets Loomis post the information quickly to customer accounts.

When companies get accurate credit faster, they can make decisions faster on what to do with their money: invest it, move it, hold it, he says. “When it’s sitting in our trucks or on our shelves, it’s a nonperforming asset. That’s good for no one.”

One of the most common queries to Loomis’s customer service line is, “Who signed for such-and-such package?” Handling those requests was a matter of finding the right papers and faxing them to the customer to compare disputed signatures. It could take days. But electronic signatures can be sent over in minutes, even minutes after a truck leaves a stop. If Loomis can provide logistics services rivals don’t offer, Sadin reasons, the company can attract more business.

Meanwhile, Sadin says, once you collect more digital data, you can analyze it for customers and charge them for the insights. In the future, Loomis sales people could let a bank know, for example, if one particular branch consistently fails to have packages ready for pickup, which keeps Loomis guards waiting and ends up costing the bank extra. “Just like every other supply chain, we and our customers are trying to find efficiencies,” Sadin says.

Providing these technology-enabled services makes it harder for customers to switch cash-handling companies, he says. That kind of competitive advantage will become more crucial when in December Swedish parent company Securitas spins out Loomis as a standalone public company in Sweden.

But first Loomis has to finish rolling out the system to all of its 180 branches, which Sadin expects to finish by the end of next year. Meanwhile, Loomis still must plan for the certain risk that criminals will steal some of the thousands of pounds of money the company moves, Sadin says. “We pick it up, deliver it and guard it with our lives.” **CIO**

Contact Senior Editor Kim S. Nash at knash@cio.com. Share your comments at www.cio.com/article/446514.



Going Virtual

Virtualization can bring considerable advantages to enterprises, but only if they understand the complexities and how to manage them.

Steve Wilson VP, SUN xVM

The new trend is all about how to increase the efficiency of your data center by managing both your physical assets and virtual servers for optimal business value. Wilson discusses how Sun Microsystems is delivering a portfolio that will solve this challenge.

Virtualization has brought tremendous benefits to enterprises, but has also presented some considerable challenges. How does the Sun xVM Portfolio help address some of the challenges?

Sun has been a main innovator of virtualization technologies since 1985 when we introduced NFS, Network File System. Fueled by more than 20 years working with customers to solve complex IT challenges, we have built the Sun xVM Portfolio on three core principles:

1. Design for Internet scale. Allows access and ability to manage a data center via the Internet and scale across the globe for today's distributed business model.
2. Ease of use. xVM interfaces are browser-based, intuitive, preconfigured, easy to use, and easy to understand.
3. Open technologies. Sun understands that interoperability and open source matter to our customers. Sun xVM is based on open standards so its technologies work with existing data center infrastructure.

"In the long term, the benefits are going to be around agility, security and compliance."

Bottom line? Customers need to virtualize everything in order to gain real operational efficiencies and enough flexibility to manage data centers from anywhere via the Internet.

What business benefits can enterprises expect from taking advantage of Sun's xVM Platform Portfolio?

Sun's xVM Portfolio consists of four

virtualization products—each delivering a variety of benefits to companies' IT infrastructures to help customers manage today's dynamic business conditions.

Here's a brief description of each:

Sun xVM VirtualBox is an open-source hypervisor that supports all major operating systems and guests. Its small footprint and ease of use allows developers to quickly start developing applications for different platforms on one laptop or desktop.

Because Sun xVM VDI allows access to desktop applications and files from multiple different devices, employees can obtain access to critical data while alleviating security concerns.

Sun xVM Server is an enterprise-grade bare metal hypervisor that features a browser-based interface and is preconfigured for simple installation and use. Companies can simplify data center complexity by moving multiple applications and operating systems onto

a smaller number of systems, driving up utilization rates while reducing power and space costs.

Sun xVM Ops Center manages distributed data centers across the globe securely via the Internet. That delivers a much more dynamic data center, and allows you to deploy, update, patch, migrate VMs, and monitor your data center like never before.

How do you see virtualization evolving as enterprises begin to take advantage of more sophisticated products?

Virtualization found its first real uses in simple server consolidation, or the ability to take multiple underutilized servers and run them on a single piece of hardware. In the long term, however, the benefits are going to be around agility, security and compliance. The ability to package up entire virtual machines and virtual appliances and rapidly move those from place to place is going to change the rate at which people can deploy applications. I believe this is just the start of the dynamic data center evolution—where technology has to be designed for Internet scale, ease of use and open technologies. Business is getting more demanding all the time. Virtualization technologies must keep pace so that enterprises both large and small can grow and thrive in this global economy. Sun xVM portfolio can help companies get there faster.

FOR MORE INFORMATION:

Check out the white paper, "Virtualizing the Dynamic Datacenter" at www.cio.com/whitepapers/sun/virtual



Four keys to integrating the tools
and devices employees use to
communicate and collaborate

Your Plan for Unified Communications

BY JOHN BRANDON

During a video conference in Chicago with 12 employees—half of them in Madrid—Accenture CIO Frank Modruson had a brainstorm. He was, at the same time, holding a private video chat on his laptop with Paul, an employee who is based in Minneapolis. Modruson decided to connect Paul to the video conference so Paul could contribute to the discussion. He plugged a VGA cable into the laptop and clicked a button. In a second, Paul was talking to those in Chicago and in Madrid. By turning the laptop's web camera toward the telepresence screen, Paul could see the participants and they could see him. They engaged easily on a complex topic—infrastructure outsourcing—and reached a decision fast.

As a large enterprise with 180,000 employees in 49 countries, Accenture prides itself on responding quickly to clients: Consultants will jump on a plane at seemingly a moment's notice. The exchange between Paul and his colleagues was possible thanks to a unified communications platform that goes well beyond video conferencing and chat to integrate the many communications technologies



Reader ROI

- ⌘ Why unified communications is complex
- ⌘ Strategies for deploying new telecom technology
- ⌘ Obstacles to consider

Accenture's employees use.

Unified communications is primarily a software undertaking that helps unify disparate technologies. At Accenture, the unified communications platform includes presence indicators on the front end which provides a way for employees to tell people where they are (for example, at a meeting or on the phone); on the back end, the platform unifies technology silos, creating a single inbox that handles voice mail, video, IM and e-mail, so people can communicate wherever they happen to be. Accenture employees can switch seamlessly from a video conference to an online collaboration session or, with the click of a button they can elevate an instant messaging chat to a phone conversation—or even send a

channels, both wired and wireless. It's becoming a trend, according to Bob Hafner, a managing vice president at Gartner, because there are too many silos, too many messaging "cooks in the kitchen."

"Unified communications is a way to provide the tools employees really need so they can communicate more effectively," says Hafner.

Yet unifying communications is a project you should not leave to your telecommunications director. Instead, deploying UC successfully requires a CIO to champion it. UC requires the cooperation of various groups within IT such as networking, server administrators and telecommunications managers; among end-user departments inside a large company and with multiple ven-

the impact on your infrastructure, the approach you wish to take toward deployment and the impact the technology will have on business as usual.

Says Jeff Donaldson, the CIO at video game retailer Gamestop: "We don't want to deliver a product companywide that we are incrementally developing—we want to deliver a feature-rich environment."

1

Identify the Benefits

UC offers potentially big returns. Forrester found using its Total Economic Impact Model that companies could achieve significant productivity improvements and cost savings with UC products. The technology investment includes the "umbrella" system that ties components such as IM and video conferencing together (such as Microsoft's Office Communications Server 2007). A UC initiative may include other elements, such as added bandwidth and storage (to accommodate video conferencing and voice mail). You might also hire consultants who understand the big picture of UC and can help you unify systems.

"The business case is primarily built on business process improvements," says Elizabeth Herrell, a vice president at Forrester. These include reducing delays in decision making, rapid problem resolution and accelerating the sales cycle, she says. UC improves collaboration among work teams, helping companies improve time to market and reduce travel and training expenses, Herrell adds.

E. Jeffrey Hutchinson is the CIO for North America of Groupe Danone. He describes unified communications as a kind of "Brady Bunch" process (a reference to the opening of the classic show, where viewers are introduced to the

"We look at [unified comm] from two perspectives: How well does it INCREASE SALES and enable profitability, and how well does it INCREASE PRODUCTIVITY?"

—E. JEFFREY HUTCHINSON, CIO, NORTH AMERICA, GROUPE DANONE

fax—all using a common platform.

For Modruson, the key benefits are financial: He says Accenture has saved millions in travel costs by using telepresence. In June alone, 425 employees avoided international travel and another 250 avoided domestic travel by using telepresence. "Our management team is fairly distributed around the world, so the vision we have is for better remote collaboration," says Modruson.

Unified communications constitutes the applications and functions that are used to implement fixed mobile convergence (FMC). FMC focuses on bringing the fixed and mobile components of communications together; UC involves giving people the tools to move seamlessly between multiple communication

dors for servers, VoIP, networks and video conferencing. (See "Some Unified Communications Vendors," Page 66.)

Early adopters of UC, including Modruson and CIOs from Groupe Danone (which owns the Dannon brand in the U.S.), United Natural Goods, Gamestop and CNL Financial say you shouldn't invest in UC lightly. UC has an impact on numerous corporate policies and practices, including the mobile devices used by employees, as well as with telecommuting practices and regulatory compliance issues. And, as with any big change, UC presents challenges in getting employees to adopt the technology.

Thus, it's important to have a comprehensive plan that starts with a solid business case. You also need to consider

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“Your network has to be ready to SUPPORT it, your messaging platform needs to be READY and fully CAPABLE, and you may need to expand storage.”

—JOEL SCHWALBE, CIO AND SVP, CNL FINANCIAL

combined family) that integrates text, audio, video, VoIP and messaging.

Some of the components, such as phones and network switches from Cisco and messaging tools from IBM, were already installed. Now Groupe Danone is working on upgrading laptops; Hutchinson's team is evaluating built-in webcams, for example, to see if the current generation supports the video resolution they're looking for.

Like Modruson, Hutchinson sees reduced travel as a major benefit. He has direct reports, working in seven different locations. Yet he can hold regular meetings using high-definition video over VoIP. The hard-dollar returns can be hard to pinpoint initially. “But we look at it from two perspectives: How well does it increase sales and enable profitability? And, how well does it increase productivity?” UC also figures into Groupe Danone's sustainability initiatives, helping reduce carbon emissions.

Gas prices put the benefits of reducing travel front and center. “The gas crisis was not apparent when we started the effort,” Hutchinson says, “However, as we all know, it is now. So we adjusted our focus and increased the speed of deployment of office-based HD video gear in local conference rooms.”

The company's goal was to reduce (or eliminate) travel cost and downtime for one-day internal meetings. “Based on the requests from the user community, we reprioritized our focus around external “gateway” connections for the same reason,” Hutchinson adds.

(For more about Hutchinson's process for rolling out UC and other emerg-

ing technologies, see “Early Adopters' Secrets for Success with New Technology” at www.cio.com/article/394663.)

2

Understand Infrastructure and Software Needs

The return you get from UC depends, of course, on the infrastructure investment you need to make it work. Assuming you have already deployed an IP network (necessary for integrating IP-based communications), UC applications can still have a dramatic effect on network traffic. You may have to invest in extra bandwidth to handle the new burden of hosting large-scale video conferences or mixing and matching IM chats, video conferencing and IP phone calls at the same time.

Meanwhile, legacy e-mail, voice mail and IM platforms may not support integration and can create headaches for IT staff in different areas of the department (a UC initiative often forces a decision about whether data networking and telecommunications teams should be combined).

“Your network has to be ready to support it, your messaging platform needs to be ready and fully capable, and you may need to expand storage,” says Joel Schwalbe, the CIO and a senior vice president at CNL Financial.

When Schwalbe's team began to investigate UC, it uncovered two potential obstacles: First of all, says Schwalbe, he learned that CNL's document retention program, required for government compliance, did not necessarily address voice mail. Under UC, voice mail would become part of the e-mail system, which is subject to retention. Voice-mail files are potentially much larger than e-mail, requiring more storage or changes to the data archiving process.

“We had started down the path and then realized we've got to get our compliance folks involved and made sure everybody was weighing in on what we're doing,” says Schwalbe. “Our current policy indicates that we must maintain 100 percent of all e-mails for our FINRA [Financial Industry Regulatory Authority]-licensed associates. However, when voice mails are introduced to the e-mail system—which are not subject to the same regulatory compliance—then we need to adapt the policy to consider the content of the e-mail, not just the e-mail itself.”

Meanwhile, the unification of voice, fax and e-mail on the same servers created a requirement for more centralized storage, he says, especially as it relates to data deduplication for each medium.

Not only that, but Schwalbe determined that CNL's Microsoft Exchange 2003 messaging platform wouldn't support integration with Office Communications Server 2007, the platform with which he chose to integrate the company's communications technologies. “We really feel that to derive the value, we need to upgrade to Exchange 2007 before we will go full-on with unified communications,” he says. “We really want to take advantage of the collaboration capabilities with the Office 2007 suite Exchange 2007, OCS 2007, as well as our VoIP communications servers.”

Another infrastructure consideration is that, when unifying communication components, the individual components might not be designed to work together. Omnicom Media Group made its first foray into UC with a project to standardize on a federated instant messaging platform.



Unified Communications

Beyond Convergence UC Promises to Enable Productivity

David Petts

SENIOR VP, BUSINESS MOBILITY, MARKETS, NOKIA

David Petts is responsible for managing the global Business Mobility sales channel in the Markets organization at Nokia. In this role, David oversees the sales of services and software and devices to business customers.

CXO Media sat down with David Petts, Senior Vice President, Business Mobility, Markets for Nokia, to learn how Nokia is delivering on the promise of unified communications (UC) now and where it's headed.

How does Nokia define UC?

In simple terms, we see unified communication covering two different aspects. On the voice side, it's about fixed/mobile convergence and unifying PBX connectivity with mobile conversations, so you can have a single device that can seamlessly go back and forth across a

24x7. Increasingly those are smart devices capable of much more than just making cellular calls.

Beyond that we have Nokia Intellisync Mobile Suite, which is a modular middle-ware platform that provides email, device management, and security elements that include device locking, authentication, encryption, and secure VPN connections. This is the foundation upon which the UC capability will be added. In addition to the middleware approach we also deliver direct connection from the device. For example we already provide Mail for Ex-

"It's about providing access to many collaboration and communication elements with a unified look and feel, on a single mobile device."

cellular network and a wireless LAN/IP network. The wireless device becomes an extension or end point on your PBX, so it supports all the traditional PBX features.

The other element is more data-centric, using email as a starting point, but adding other communication methods such as instant messaging, SMS/MMS text messaging, video messaging, and videoconferencing. So it's about providing access to many collaboration and communication elements with a unified look and feel, on a single mobile device.

Why is Nokia well-positioned to deliver on the promise of UC?

First, we have the largest installed base, with roughly 40 percent market share globally and nearly 1 billion people carrying a Nokia device, many of them

change, using the Microsoft ActiveSync protocol as a way of getting your email, personal information, calendar and contacts pushed and synchronized back and forth with your mobile device in near real time without the need of a middle-ware service. We are also evolving this approach to go beyond email to a broad UC capability.

Finally we recognize that unified communications is not unique to business people during their professional life. It's also something individuals want to use more broadly. In two devices we recently launched – the E71 and E66 – we have the ability to switch between business and personal modes. For each mode, you can bring six different application icons to the home screen.

If I'm a CIO, why do I need to concern myself with that personal aspect?

In the case of mobility, there's a high crossover between personal and professional usage. The better you can address both of those, the higher the likelihood of implementation success and adoption by the individual. Then the speed at which it gets accepted and at which people ramp to use it effectively is much higher.

How does Nokia extend presence capabilities to the wireless world?

At Nokia, we envision a world where my wireless device knows my calendar and automatically changes the presence of my device so I don't get an embarrassing phone call in the middle of a presentation. When I'm between meetings, it should say, "Ah, you're in Italy. I can see from your calendar which Italian customers you're visiting. I'll quiz your sales force automation system and find the largest customers you're not visiting, and suggest you call one while you're in the car." That's about knowing location as well as availability, and the interconnection of the different applications and capabilities.

FOR MORE INFORMATION:

Learn more about Nokia's mobility solutions at: www.cio.com/whitepapers/nokia-uc

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Some Unified Communications VENDORS

ASCENDANT

The Voice Mobility Suite ties smartphones into a unified communications implementation.

AVAYA

Integrated Web Conferencing provides an online collaboration environment that helps employees share documents, chat and show presentations. The company's Video Conferencing product offers a multipoint video-conferencing tool with presence indicators.

CISCO

The company's CallConnector component provides unified communications capabilities within Microsoft Office and Salesforce.com. Unified MeetingPlace is an all-in-one voice, video and Web-conferencing tool. Unified Personal Communicator is a client program that allows employees to start IM chats, and hold video and audio conferences. It also provides presence indicators.

MICROSOFT

Office Communications Server 2007 unites disparate telecom services such as VoIP, video and audio conferencing and instant messaging. It also enables presence indicators through the Active Directory, so system users can know each other's whereabouts. OCS 2007 works with Office Communicator 2007, the client application that allows employees to start video and audio chats, use IM and indicate presence.

Microsoft's unified communication solution includes Exchange Server 2007, which hosts all e-mail, voice mail, faxes and schedules. Employees can access voice mail and e-mail. The Office 2007 suite includes direct tie-ins to presence indicators. If you work on a Word document, you can let coworkers know you're doing it and see who else is working on a shared document. —J.B.

Employees were running three main IM clients: AOL Instant Messenger, Yahoo Messenger and Windows Live Messenger.) "Our branding was being compromised because people were using their personal IMs," says CIO Kenneth Corriveau. There were security issues, too, because employees were using three public IM clients. "There was no way at the time to protect our environment from viruses or P2P file transfers. Moving to a corporate solution gave us all this capability," he says.

But that took two years due to the lack of messaging standards between clients and a wish to not disrupt end users, according to Corriveau. "There were many components involved, and the technology was maturing from a variety of perspectives," Corriveau notes. They even had trouble getting Microsoft Com-

municator (the predecessor to OCS) to work with MSN Messenger, although both are Microsoft products.

Omnicom eventually chose OCS and Cisco's IP telephony platform as core UC components, then hired AT&T to integrate all the pieces, including fax-to-e-mail services from Interstar Technologies and a tool from Ascendant Systems that provides mobile device users with a single phone number.

Joshua Sigel, vice president of IT operations and applied technologies at UNFI (formerly Unified Natural Foods), is deploying UC to help his company enable workers to be productive anywhere, to reduce travel costs and increase face-to-face communication despite geography. He's using Avaya for IP telephony and phone, and Cisco for networking, along

with Polycom and Microsoft Round Tables for video. But he has instructed his IT staff to monitor UC developments: Avaya might not be as strong in video conferencing as another vendor right now, but that could change as its UC offering matures. He's also watching developments in telepresence technology from Microsoft.

"We focus on the best of breed in each category but don't want to be tied down to a particular vendor who has not implemented everything we need," says Sigel.

Analyzing multiple vendors when choosing UC products is all part of the procurement selection process. Hutchinson recounts looking at multiple vendors including Cisco, Tandberg, Microsoft and others. "At that time it was not HD," he notes. The application's "roundtable" to identify participants did a good job of identifying who was speaking. "But we also needed to see who was on the other end of the video link," Hutchinson adds. "In our case, we use projectors or displays on walls, which causes participants at the table to have to turn away from the MS Video solution, and then we didn't get the benefits."

3

Decide on a Deployment Strategy

Given all the variables, experts recommend a measured approach to deploying UC. Forrester's Herrell says most organizations begin by integrating a few applications such as presence (who is where in the organization), messaging and audio conferencing, and then they gradually roll out other applications.

"I suggest organizations begin with pilots and identify employees that could gain from its features such as remote workers, knowledge workers and those who are involved in projects that require

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ongoing collaboration with teammates,” says Herrell.

While not all UC technologies can be considered core to running the business, UC helps employees communicate and be more productive. As such, you can't let UC deployment get in the way of mission-critical applications such as ERP, even though the complexity of unifying systems and introducing telepresence on company networks is sure to cause networking complications.

Pilots help CIOs examine exactly how UC will change the infrastructure and determine how to mitigate performance risks. In pilots, Hutchinson advises involving both employees who are knowledgeable about technology (such as those in IT) and those who have limited technology expertise to provide adequate feedback about the impact of new tools, its usability and benefits to the business.

When you hear an IT staff member say, “My video conference tool crashes my instant messenger (IM) client,” Hutchinson says, you can address those concerns methodically by approaching vendors and addressing interoperability with them, or by changing network settings and server configurations.

Gamestop's Donaldson began with 150 employees at headquarters, along with another five or so in Europe to test international capabilities. The company is using Microsoft OCS and Microsoft Office SharePoint Services, and is considering other tools as well. “Our primary purpose of the incremental approach is to test-market the solution and ensure value is obtained prior to a full rollout, and to create a feature-rich solution prior to the full rollout companywide.”

At Accenture, Modruson is taking a more aggressive approach with 6,000 initial users followed by a mass deployment beginning this fall. In Modruson's view, the more people who can use the technology, the more effectively they can collaborate. When the company installed telepresence to just a couple of locations in early 2008, it wasn't used very much. When they rolled out these features to 13 locations this spring and summer, there was a snowball effect:

You will need to **DEFINE NEW EXPECTATIONS** for how employees should communicate. Employees still find ways to avoid voice-mail messages.

Many more employees at all sites started using the technology.

4

Focus on People

Given that UC is all about making it easier for employees to communicate, no UC strategy can be complete without a plan for how people can make the switch. Any change, notes Modruson, brings more complexity initially, even if its goal is to simplify and streamline.

“There is a risk of relying on Internet connectivity,” he says, noting that remote video conferencing or IM doesn't work if a connection is not available. “And there's a challenge associated with change management—the technology changes the way people communicate and therefore there's a shift in behavior required.”

Gartner's Heller says the best strategy to counter some of these risks is to make sure everyone in the organization understands what's happening: Employees should know how far-reaching the UC program will be. You'll need to define for them how the applications and devices they use will change. You'll also need to tell them how to resolve technology-induced problems: Try instant messaging to reach an employee

who does not appear to be available by video conference, for example.

Finally, you, along with business leaders, will need to define new expectations for how employees should communicate with each other. The last challenge with UC is harder to quantify, but still important. Accenture's Modruson observes a “human latency” factor: Where IT might envision highly improved communication, employees still find ways to avoid voice-mail messages, do not reply promptly to e-mail or just get overwhelmed with a new approach to communication.

One way Accenture addressed the problem was to make sure communications were truly unified—for example, voice-mail messages were delivered quickly as audio files to an e-mail inbox, so that employees receive all messages in one place and can listen to voice mail on a computer, not just with a phone.

UNFI's Sigel believes UC is inevitable. CIOs should just look around, he says, to see all the ways employees are communicating with one another. Integration will be essential to keeping people in touch and productive. So, it's best to begin the hard work of analysis, building the business case, deploying a solution and working through the challenges that will invariably arise. Modruson agrees that UC is a game-changing exercise.

“Unified communication technologies will significantly enhance the connectedness of our people,” he says. “The ability to reach out and communicate with colleagues improves efficiency and productivity and ultimately enhances our ability to better serve our clients.” **CIO**

The Value of Unified Communications

There's more about the ROI of integrated messaging in **UNIFIED COMMUNICATIONS WITH ROI IN MIND** at www.cio.com/article/395663.

CIO.com

John Brandon is a freelance writer based in Minnesota. To comment on this article, go to www.cio.com/article/446514.



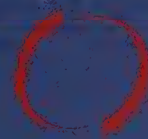
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Forge Business Partnerships

While some CEOs recognize the expanding role that the IT organization must play as a partner in creating new value, there are still too many companies where IT is perceived as a nonstrategic service provider or cost center. So how can CIOs change this perception and break down the internal boundary separating IT from the rest of the business?

CIO Executive Council members at Quest Diagnostics, Medco Health Solutions and YRC Worldwide have gone beyond the basics of alignment and banning techno-speak to reshape the IT culture, refocus on the end customer and reallocate funding to drive business. They offer the following advice.

Shift your spending. At \$6.7 billion Quest Diagnostics, CIO Mary Hall Gregg met with her CEO three years ago to set a target for IT's budget that would focus on strategic growth rather than keep-the-lights-on maintenance. Today, she and her team are in the process of more than doubling the percentage of budget allocated to business-growth initiatives.

One project that boosted bottom-line growth was the launch of an online appointment scheduling system for blood testing, which got a positive response from customers. Ultimately, increased patient satisfaction trans-

lates into physician and insurance plan satisfaction, and that helps the bottom line, says Gregg. "Continually increasing the percentage of IT work that is earmarked for new product development is an annual goal in IT," she says.

Medco also increased funding for growth-related initiatives, which magnified IT's business impact at the \$50 billion healthcare company. "One of our first steps was to really understand what drives our cost structure and where IT can assist with driving cash to the bottom line," says CIO Mark Halloran. Halloran found that new product development was an area of the business where IT could really make a monetary difference by getting involved at a strategic partner level. On average, 60 percent of IT capital investment is now aligned with new product development, he says.

Maintain a small-town feel. With the trend toward mergers and acquisitions, companies intent on centralizing previously independent IT groups risk harm to the tight business ties those units had forged. Michael Rapken, executive VP and CIO at YRC Worldwide, faced that issue when he took over as CIO shortly after the USF acquisition by Yellow Roadway, which created a

Continued on Page 72



Michael Rapken

[ONE::LINER]

"We needed to **keep the commitments** that we made to the customer, so we really had to understand their [IT-related] needs."

—MEDCO CIO MARK HALLORAN



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How to Reshape IT

Q: I don't want to create a strategic vision in a vacuum. How can I involve my team to help brainstorm what IT should focus on and look like a few years out?

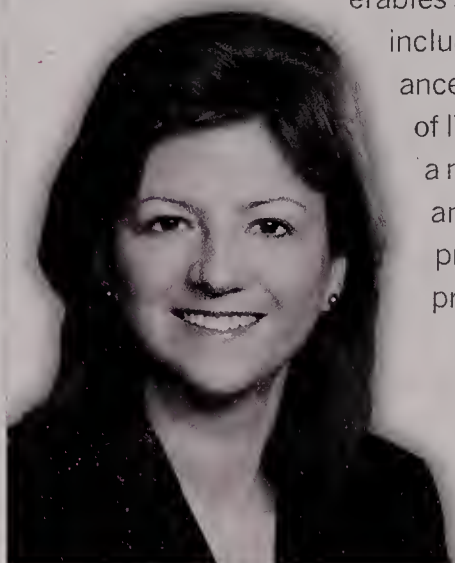
A: I took a select group of leaders from the IT organization to brainstorm what the vision for the department should be. I didn't just take my direct reports; I handpicked people that I thought would contribute most to the work. This also worked to my advantage in creating a bit of buzz around the initiative within the department. Output from the initial meeting included a strategic vision of the IT function five years out and a list of specific actions to engage others in meeting these goals.

We created four "vision teams," each with 10 to 12 participants and different focus areas. The first was charged with creating transparency through metrics and value demonstrations. The second was to improve success and progress of maintenance projects. The third was to drive effectiveness through a centralized PMO, and the fourth was tasked with eliminating bureaucracy and redundancy through process redesign.

I picked leaders for the teams and meet with each quarterly. Some of their deliverables so far have

included a balanced scorecard of IT metrics, a new IT PMO and improved programming practices.

—Mary Hall
Gregg



Partnerships

Continued from Page 70

combined \$10 billion transportation company. "I was in charge of three very different IT groups that had strategic ties to their businesses and were now thrown together and asked to act as one," says Rapken.

To replicate the close-knit relationship at the corporate level, Rapken helped to redesign the project prioritization process and created separate spending accounts for the operating companies to approve their own small projects. This allowed them to directly control a portion of the IT investment, while large project prioritization was performed at an enterprise level. This ensured that IT was working on the most meaningful projects for the corporation while also working on projects specifically directed by the operating companies.

Focus on the end customer. Medco's products and services are heavily customized for its biggest clients. Many of those services are IT-intensive, such as the online pharmacy. So IT needed to be flexible and responsive to client needs and reduce market delivery times, says Halloran. He knew his team needed to be empowered to make resourcing and scheduling changes required to meet client expectations around service and product delivery. "I told the account teams that we needed to keep the commitments that we made to the customer, so we really had to understand their [IT-related] needs," he says.

Halloran established an IT Leadership Program to give his staff the leadership skills to deal with customers, training them to engage business partners on their terms. The training has been so successful that it is now provided to all middle and senior managers across the company. Today, Medco IT staff is aligned with individual client segments such as small business or health plan. IT members attend monthly team meetings with the client and sit with the account managers.

Build business-oriented IT managers. Gregg developed a new career path for IT that ensures her senior managers will have a strong business sensibility. "Today, our career paths are not just about an upward progression but about getting experience across a spectrum of the business," she says.

The career path experience enables her staff to think more strategically about the business. These managers are also developing strategic and business-partnering skills in their staff. And Gregg tasked her directors with improving their ability to brainstorm new ideas and to get others to think more innovatively. **CIO**

Carrie Mathews, group manager of member services, can be reached at cmathews@cxo.com. To comment on this article, go to www.cio.com/article/446600.

The CIO Executive Council is a professional organization for CIOs founded by CIO's publisher. To learn more about the council, visit www.cioexecutivecouncil.com or contact Vice President of Development Dexter Siglin at dsiglin@cio.com or 508 935-4493.



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Business Offices: CXO Media Inc., 492 Old Connecticut Path, P.O. Box 9208, Framingham, MA 01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published semimonthly and as a combined issue Dec. 15/Jan. 1 by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number PM40063731. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

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Change of Address: Please go to www.omed.com/custsrv/cio and follow the online instructions.

Postmaster: Send change of address to CIO, P.O. Box 489, Northbrook, IL 60065-9816. Printed in the U.S.A.

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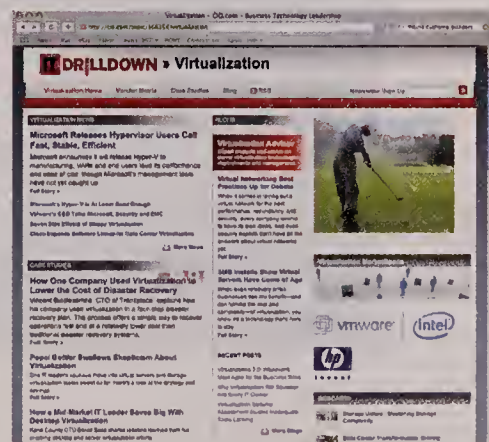
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5

Things I've Learned

THE VOICE OF EXPERIENCE * AS TOLD TO KRISTIN BURNHAM

Helen Greiner is president and cofounder of iRobot, a company that invents military and household robots. Innovation, she says, is the essence of her business.

To innovate successfully, you need a culture of empowerment.

Our most successful product, the Roomba, a robot that vacuums, stemmed from an idea that a group of employees had. They approached us with this idea, we backed it and now millions of units have sold. Today, we hold internal contests allowing our employees to innovate and present their inventions to the top management team. In fact, our newest product, a robot that cleans gutters, is the result of an innovation contest.

Diversity in the workplace leads to diversity in ideas.

The project manager for the Roomba 500 series was an Islamic refugee from Bosnia. She said, "We are going to build the robot that I need to clean up after my 2-year-

old twins." She looked at the usability and product attributes differently than most men on the team. Because we're looking for new approaches and new ideas, diversity of background, perspective and cultural experience is important.

It's not about me, it's about you.

I always wanted to build an Internet-connected Robot (read "New Household Robot Promises to Make Virtual Visits Easy" at www.cio.com/article/440376). In 2000, we tried to get one to market with a selling price of \$2,500. I knew I was willing to pay a few thousand dollars for a robot—and I knew other robot enthusiasts like me would be willing, too—but at that time, there just wasn't enough interest. Eight years later, though, we've created a different Internet-connected robot with many of the same capabilities but selling at a fraction of the cost. It's become a reality because we focused on the right things: pricing, functionality and the end user.

I take pride in our inventions.

Our PackBot—a robot that detonates roadside bombs for the military—holds a special place in my heart. I have worked closely with the armed services for the past 20 years and have gained a very clear understanding of the risks our soldiers take every day. I have shaken hands with men and women who credit our PackBot with saving the lives of their teammates. It's rewarding and motivating, and we continue to learn from them and work on inventions that will help with their missions. Our robots are truly making a difference in their everyday lives.

I never met a robot I didn't like.

R2D2 from *Star Wars* first inspired me to build robots. I've always believed that robots will be a part of our lives, and this belief kept me going through a lot of ups and downs—especially when we were living contract to contract and the stress was high.

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but customers should always have

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